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=> d que 166
L9      925016 SEA FILE=REGISTRY ABB=ON PLU=ON (P(L)N)/ELS
L11     820807 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND (SI OR BI OR GE
        OR SN OR SB OR O OR S OR SE OR TE OR PO)/ELS
L12     322520 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND 2-100/P
L13     249333 SEA FILE=REGISTRY ABB=ON PLU=ON L12 AND 2-100/N
L15     69902 SEA FILE=REGISTRY ABB=ON PLU=ON L13 AND X/ELS
L16     24977 SEA FILE=REGISTRY ABB=ON PLU=ON L15 NOT M/ELS
L18     147700 SEA FILE=REGISTRY ABB=ON PLU=ON L13 NOT M/ELS
L19     682222 SEA FILE=REGISTRY ABB=ON PLU=ON L11 NOT (L16 OR L18)
L21     474553 SEA FILE=REGISTRY ABB=ON PLU=ON L19 NOT M/ELS
L22     474553 SEA FILE=REGISTRY ABB=ON PLU=ON L11 AND L21
L23     83004 SEA FILE=REGISTRY ABB=ON PLU=ON L22 NOT 1-100/NR
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L28     QUE ABB=ON PLU=ON L16
L29     QUE ABB=ON PLU=ON L23
L30     499051 SEA FILE=REGISTRY ABB=ON PLU=ON L19 AND 1/NC
L31     393828 SEA FILE=REGISTRY ABB=ON PLU=ON L22 AND 1/NC
L32     499051 SEA FILE=REGISTRY ABB=ON PLU=ON L30 OR L30
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L34     349051 SEA FILE=REGISTRY ABB=ON PLU=ON L32 NOT L33
L35     393828 SEA FILE=REGISTRY ABB=ON PLU=ON L31 OR L31
L36     150000 SEA FILE=REGISTRY RAN=(212008-85-0) ABB=ON PLU=ON L31 OR
        L31
L37     243828 SEA FILE=REGISTRY ABB=ON PLU=ON L35 NOT L36
L38     22956 SEA FILE=HCAPLUS ABB=ON PLU=ON L33
L39     25126 SEA FILE=HCAPLUS ABB=ON PLU=ON L36
L40     359631 SEA FILE=HCAPLUS ABB=ON PLU=ON L37
L41     349051 SEA FILE=REGISTRY ABB=ON PLU=ON L34 OR L34
L42     150000 SEA FILE=REGISTRY RAN=(128866-97-7) ABB=ON PLU=ON L34 OR
        L34
L43     199051 SEA FILE=REGISTRY ABB=ON PLU=ON L41 NOT L42
L44     43157 SEA FILE=HCAPLUS ABB=ON PLU=ON L42
L45     QUE ABB=ON PLU=ON L43
L46     QUE ABB=ON PLU=ON (L27 OR L28 OR L29) OR (L38 OR L39 O
        R L40) OR (L44 OR L45)
L52     5031 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 AND ELECTROLYT?
L54     230 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND (NONAQUEOUS? OR
        NON AQUEOUS?)
L55     16 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND (SEPARAT? OR
        DIVID?)
L56     169 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND ELECTROCHEM?/SC,SX
L57     81 SEA FILE=HCAPLUS ABB=ON PLU=ON L56 AND DEV/RL
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L65     243 SEA FILE=HCAPLUS ABB=ON PLU=ON L64
L66     64 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 NOT L65

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=> d 166 1-64 ibib ed abs hitstr hitind

L66 ANSWER 1 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2006:657261 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:127575  
 TITLE: Long life lithium batteries with stabilized

INVENTOR(S): electrodes  
Amine, Khalil; Liu, Jun; Vissers, Donald R.; Lu, Wenquan

PATENT ASSIGNEE(S): The University of Chicago, USA

SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 857,365.  
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20060147809	A1	20060706	US 2006-338902	20060124
US 20050019670	A1	20050127	US 2004-857365	20040528
			<--	
PRIORITY APPLN. INFO.:			US 2004-857365	A2 20040528
			US 2005-647361P	P 20050126
			US 2003-488063P	P 20030717
			<--	

ED Entered STN: 07 Jul 2006

AB The present invention relates to non-aqueous electrolytes having electrode stabilizing additives, stabilized electrodes, and electrochem. devices containing the same. Thus the present invention provides electrolytes containing an alkali metal salt, a polar aprotic solvent, and an electrode stabilizing additive. In certain electrolytes, the alkali metal salt is a bis(chelato)borate and the additives include substituted or unsubstituted linear, branched or cyclic hydrocarbons comprising at least one oxygen atom and at least one aryl, alkenyl or alkynyl group. In other electrolytes, the additives include a substituted aryl compound or a substituted or unsubstituted heteroaryl compound wherein the additive comprises at least one oxygen atom. There are also provided methods of making the electrolytes and batteries employing the electrolytes. The invention also provides for electrode materials. Cathodes of the present invention may be further stabilized by surface coating the particles of the spinel or olivine with a material that can neutralize acid or otherwise lessen or prevent leaching of the manganese or iron ions. In some embodiments the coating is polymeric and in other embodiments the coating is a metal oxide such as ZrO<sub>2</sub>, TiO<sub>2</sub>, ZnO, WO<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, SiO<sub>2</sub>, SnO<sub>2</sub> AlPO<sub>4</sub>, Al(OH)<sub>3</sub>, a mixture of any two or more thereof.

IT 291-37-2D, Cyclotriphosphazene, Vinyl containing derivs.

(long life lithium batteries with stabilized electrodes)

RN 291-37-2 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine (CA INDEX NAME)



INCL 429326000; 429330000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 84-15-1D, o-Terphenyl, aryloxy derivs. 86-74-8D, Carbazole, aryloxy derivs. 88-12-0, 1-Vinylpyrrolidin-2-one, uses 91-22-5D, Quinoline, aryloxy derivs. 101-84-8, Diphenyl ether 101-84-8D, Diphenyl ether, aryloxy derivs. 102-09-0, Diphenyl carbonate 102-09-0D, Phenyl carbonate, aryloxy derivs. 106-92-3, Allyl glycidyl ether 109-93-3, Divinyl ether 109-97-7D, Pyrrole, aryloxy derivs. 109-99-9D, Tetrahydrofuran, aryloxy derivs. 110-00-9D, Furan, aryloxy derivs. 110-89-4D, Piperidine, aryloxy derivs. 111-34-2, Butyl vinyl ether 120-92-3D, Cyclopentanone, aryloxy derivs. 140-67-0, 4-Allylanisole 142-96-1D, Butyl ether, aryloxy derivs. 176-53-4D, Ethylene silicate, aryloxy derivs. 288-32-4D, Imidazole, aryloxy derivs. 289-80-5D, Pyridazine, aryloxy derivs. 290-37-9D, Pyrazine, aryloxy derivs. 291-37-2D, Cyclotriphosphazene, Vinyl containing derivs. 291-37-2D, Cyclotriphosphazene, aryloxy derivs. 503-30-0D, Oxetane, aryloxy derivs. 614-99-3D, Ethyl-2-furoate, aryloxy derivs. 930-22-3 1072-53-3D, Ethylene sulfate, aryloxy derivs. 1917-10-8, Vinyl-2-furoate 3724-65-0D, Crotonic acid, aryloxy derivs. 3741-38-6D, Ethylene sulfite, aryloxy derivs. 4245-37-8, Vinyl methacrylate 4370-23-4, 1-Vinylpiperidin-2-one 4427-96-7, Vinyl ethylene carbonate 5009-27-8D, Cyclopropanone, aryloxy derivs. 6622-92-0, 2,4-Dimethyl-6-hydroxy-pyrimidine 7570-02-7, DiVinyl carbonate 12789-45-6, Methyl phosphate 14265-44-2D, Phosphate, aryloxy derivs. 14861-06-4, Vinyl crotonate 15896-04-5 16053-89-7D, 2-Furancarboxylate, aryloxy derivs. 16410-02-9 18358-13-9D, Methacrylate, aryloxy derivs. 21994-23-0 23462-75-1, Dihydropyran-3-one 32893-16-6 33879-62-8, 2-Vinyloxetane 36885-49-1, Vinyl phosphate 37203-76-2, Ethyl phosphate 37275-48-2D, Bipyridine, methoxy vinyl derivs. 44414-27-9 50337-14-9, 3-Vinylcyclopentanone 53627-36-4,  $\beta$ -Vinyl- $\gamma$ -butyrolactone 57453-76-6 61548-40-1 66166-61-8, 3-Vinylcyclobutanone 66281-16-1 66956-76-1 72607-84-2 104531-81-9 117823-03-7 121712-01-4 139669-84-4 557084-91-0 856785-12-1 866947-06-0 897028-07-8 897028-08-9 897028-09-0 897028-10-3 897028-11-4 897028-12-5 897028-13-6 897028-14-7 897028-15-8 897028-16-9 897028-17-0 897028-18-1 897028-19-2 897028-20-5 897028-21-6 897028-22-7 897028-23-8 897028-24-9 897028-25-0 897028-26-1 897028-27-2 897028-28-3 897381-27-0 897381-28-1 897381-29-2 897381-30-5 897381-31-6 897381-32-7 897381-33-8 897381-34-9 897381-35-0 897381-36-1 897381-37-2 897381-38-3 897381-39-4 897381-40-7 897381-41-8 897381-42-9 897381-43-0 897381-44-1 897381-45-2 897381-46-3 897381-47-4 (long life lithium batteries with stabilized electrodes)

L66 ANSWER 2 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:611359 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 143:136272

TITLE: Nonaqueous electrolytic solution for battery with improved safety

INVENTOR(S): Otsuki, Masatomo; Ogino, Takao

PATENT ASSIGNEE(S): Bridgestone Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

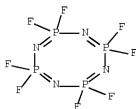
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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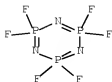
JP 2005190873 A 20050714 JP 2003-432139 20031226  
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 WO 2005064734 A1 20050714 WO 2004-JP19218 20041222  
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 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR,  
 KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,  
 MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,  
 SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,  
 VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,  
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,  
 DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC,  
 NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,  
 GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 EP 1699105 A1 20060906 EP 2004-807575 20041222  
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 R: DE, FR  
 CN 1906796 A 20070131 CN 2004-80040997 20041222  
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 US 20070172740 A1 20070726 US 2006-583412 20060620  
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 PRIORITY APPLN. INFO.: JP 2003-432031 A 20031226  
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 JP 2003-432139 A 20031226  
 <--  
 WO 2004-JP19218 W 20041222

OTHER SOURCE(S): MARPAT 143:136272  
 ED Entered STN: 15 Jul 2005  
 AB The solution contains aprotic organic solvents and supporting salts, wherein  
 each solvent contains a P- and/or N-containing compound (e.g., phosphazene  
 compound) satisfying  $|T - t| \leq 25^\circ$  (T and t are b.p. of the solvent and the  
 compound, resp.). The battery using the solution is also claimed. The P-  
 and/or N-containing compound prevents the organic solvents from ignition.  
 IT 14700-00-6 15599-91-4 33027-66-6  
 33027-66-8 55593-37-8 55593-38-9  
 55593-39-0  
 (electrolyte containing aprotic organic solvents, P- and/or  
 N-containing compds., and salts for polymer battery with improved  
 safety)  
 RN 14700-00-6 HCAPLUS  
 CN 2λ5, 4λ5, 6λ5, 8λ5-1, 3, 5, 7, 2, 4, 6, 8-  
 Tetrazatetraphosphocins, 2, 2, 4, 4, 6, 6, 8, 8-octafluoro- (CA INDEX NAME)



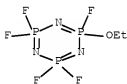
RN 15599-91-4 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexafluoro-2,2,4,4,6,6-hexahydro- (CA INDEX NAME)



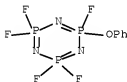
RN 33027-66-6 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
2-ethoxy-2,4,4,6,6-pentafluoro- (CA INDEX NAME)



RN 33027-68-8 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
2,2,4,4,6-pentafluoro-6-phenoxy- (CA INDEX NAME)



RN 55593-37-8 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
trifluorotrimethoxy- (CA INDEX NAME)



3 ( D1—F )

3 ( D1—O—Me )

RN 55593-38-9 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
diethoxytetrafluoro- (CA INDEX NAME)

4 ( D1—F )

2 ( D1—O—Et )

RN 55593-39-0 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
triethoxytrifluoro- (CA INDEX NAME)

3 ( D1—F )

3 ( D1—O—Et )

IC ICM H01M010-40

ICS H01M006-16

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
Technology)ST phosphorus nitrogen compd fire prevention hcnag battery;  
aprotic org solvent electrolyte phosphazene battery safety

- IT Solvents  
(aprotic; electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)
- IT Battery electrolytes  
Fireproofing agents  
(electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)
- IT Cyclophosphazenes  
(electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)
- IT Secondary batteries  
(lithium; electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)
- IT 14700-00-6 15599-91-4 33027-66-6  
33027-68-8 55593-37-8 55593-38-9  
55593-39-0  
(electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)
- IT 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate  
(electrolyte; electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)
- IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate  
(solvent; electrolyte containing aprotic organic solvents, P- and/or N-containing compds., and salts for polymer battery with improved safety)

L66 ANSWER 3 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:523822 HCAPLUS Full-text

DOCUMENT NUMBER: 143:46083

TITLE: Cathode material for nonaqueous

electrolyte lithium ion battery

INVENTOR(S): Itou, Takanori; Saito, Takamitsu; Horie, Hideaki

PATENT ASSIGNEE(S): Nissan Motor Co., Ltd., Japan

SOURCE: PCT Int. Appl., 47 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005055344	A2	20050616	WO 2004-JP18085	20041129
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WO 2005055344	A3	20060302		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,			

SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,  
 VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,  
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,  
 DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL,  
 PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,  
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 JP 2005190996 A 20050714 JP 2004-334800 20041118  
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 EP 1698004 A2 20060906 EP 2004-799939 20041129  
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 PL, SK, HR, IS, YU  
 CN 1914753 A 20070214 CN 2004-80041341 20041129  
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 US 20070082265 A1 20070412 US 2006-581858 20060630  
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 PRIORITY APPLN. INFO.: JP 2003-407542 A 20031205  
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 JP 2004-334800 A 20041118  
 WO 2004-JP18085 W 20041129

ED Entered STN: 17 Jun 2005

AB A pos. electrode material for non-aqueous electrolyte lithium ion battery of the present invention has an oxide containing lithium and nickel, and a lithium compound which is deposited on a surface of the oxide and covers nickel present on the surface of the oxide. By this structure, it is possible to suppress decomposition of an electrolysis solution as much as possible and drastically reduce swelling of the batteries.

IT 852709-57-0, Lithium metaphosphate nitride oxide  
 (Li<sub>2.9</sub>(PO<sub>3</sub>)N<sub>0.3600.3</sub>)

(cathode material for nonaq. electrolyte  
 lithium ion battery)

RN 852709-57-0 HCAPLUS

CN Lithium metaphosphate nitride oxide (Li<sub>2.9</sub>(PO<sub>3</sub>)N<sub>0.3600.3</sub>) (CA INDEX  
 NAME)

Component	Ratio	Component Registry Number
N	0.36	17778-88-0
O	0.3	17778-80-2
O3P	1	15389-19-2
Li	2.9	7439-93-2

IC ICM H01M004-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)

ST cathode material nonaq electrolyte lithium ion  
 battery

IT Battery cathodes  
 Vehicles

(cathode material for nonaq. electrolyte  
 lithium ion battery)

IT Carbon black, uses  
 Fluoropolymers, uses  
 (cathode material for nonaq. electrolyte  
 lithium ion battery)



IT Secondary batteries  
(lithium; cathode material for nonaq. electrolyte lithium ion battery)

IT 39300-70-4, Lithium nickel oxide 128975-24-6, Lithium manganese nickel oxide LiMn0.5Ni0.5O2 218446-67-4, Aluminum cobalt lithium nickel oxide (Al0.02Co0.15LiNi0.83O2)  
(cathode material for nonaq. electrolyte lithium ion battery)

IT 24937-79-9, PvdF  
(cathode material for nonaq. electrolyte lithium ion battery)

IT 852709-57-0, Lithium metaphosphate nitride oxide (Li2.9(PO3)N0.36O0.3)  
(cathode material for nonaq. electrolyte lithium ion battery)

IT 546-89-4, Lithium acetate 553-54-8, Lithium benzoate 553-91-3, Lithium oxalate 554-13-2, Lithium carbonate 868-17-7, Lithium tartrate 1303-86-2, Boron oxide (B2O3), uses 1310-65-2, Lithium hydroxide 2922-61-4, Lithium pyruvate 4485-12-5, Lithium stearate 6867-30-7, Lithium acetylde ethylenediamine complex 7439-93-2D, Lithium, compound 7550-35-8, Lithium bromide 7789-24-4, Lithium fluoride, uses 7790-69-4, Lithium nitrate 10377-48-7, Lithium sulfate 10377-51-2, Lithium iodide 10377-52-3, Lithium phosphate 12057-24-8, Lithium oxide (Li2O), uses 13759-10-9, Silicon sulfide (SiS2) 15365-14-7, Iron lithium phosphate felipo4 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide 184905-46-2, Lithium nitrogen phosphorus oxide  
(coating; cathode material for nonaq. electrolyte lithium ion battery)

L66 ANSWER 4 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2005:368537 HCAPLUS Full-text  
DOCUMENT NUMBER: 142:433071  
TITLE: Secondary nonaqueous electrolyte battery

INVENTOR(S): Mori, Sumio; Murai, Tetsuya  
PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005116424	A	20050428	JP 2003-351606	20031010
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PRIORITY APPLN. INFO.:			JP 2003-351606	20031010
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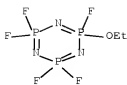
ED Entered STN: 29 Apr 2005

AB The battery has a Li-intercalating cathode, an anode, and a nonaq. electrolyte solution; where the electrolyte solution contains an aromatic compound and a phosphazene compound

IT 33027-66-6 33027-66-8  
(electrolyte solns. containing aromatic compds. and phosphazene compds. for secondary lithium batteries)

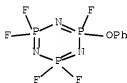
RN 33027-66-6 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2-ethoxy-2, 4, 4, 6, 6-pentafluoro- (CA INDEX NAME)



RN 33027-68-8 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
2,2,4,4,6-pentafluoro-6-phenoxy- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
Technology)

ST secondary lithium battery electrolyte arom compd phosphazene  
compd

IT Battery electrolytes  
(electrolyte solns. containing aromatic compds. and phosphazene  
compds. for secondary lithium batteries)

IT Secondary batteries  
(lithium; electrolyte solns. containing aromatic compds. and  
phosphazene compds. for secondary lithium batteries)

IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate  
105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate  
616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate  
7782-42-5, Graphite, uses 21324-40-3, Lithium hexafluorophosphate  
52627-24-4, Cobalt lithium oxide  
(electrolyte solns. containing aromatic compds. and phosphazene  
compds. for secondary lithium batteries)

IT 92-52-4, Biphenyl, uses 321-60-8, 2-Fluorobiphenyl 324-74-3,  
4-Fluorobiphenyl 827-52-1, Cyclohexyl benzene 28652-72-4, Methyl  
biphenyl 33027-66-6 33027-68-8  
(electrolyte solns. containing aromatic compds. and phosphazene  
compds. for secondary lithium batteries)

L66 ANSWER 5 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:368511 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 142:433056

TITLE: Secondary noneaqueous electrolyte  
battery

INVENTOR(S): Koto, Tomoko

PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

DOCUMENT TYPE: CODEN: JKXXAF  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1 Japanese  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005116306	A	20050428	JP 2003-348133	20031007
			<--	
PRIORITY APPLN. INFO.:			JP 2003-348133	20031007
			<--	

ED Entered STN: 29 Apr 2005

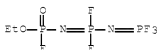
AB The battery has a cathode, containing a Li-Ni-Mn composite oxide :  $\text{Li}_x\text{Ni}_y\text{Mn}_{2-y}\text{O}_{4-\delta}$  ( $0 < x < 1.1$ ;  $0.45 < y < 0.55$ ; and  $0 \leq \delta < 0.4$ ) as a cathode active mass, an anode, and a nonaq. electrolyte solution; where the electrolyte solution contains 0.1-20 mass% phosphazene derivative

IT 850650-07-6

(cathodes containing lithium manganese nickel oxides and electrolytes containing phosphazene derivs. for secondary lithium batteries)

RN 850650-07-6 HCAPLUS

CN Phosphoramidofluoridic acid, N-[difluoro((trifluorophosphoranylidene)a mino]phosphoranylidene]-, ethyl ester (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M004-02; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery cathode lithium manganese nickel oxide; battery electrolyte phosphazene deriv

IT Battery cathodes

Battery electrolytes

(cathodes containing lithium manganese nickel oxides and electrolytes containing phosphazene derivs. for secondary lithium batteries)

IT Polyphosphazenes

(cyclic; cathodes containing lithium manganese nickel oxides and electrolytes containing phosphazene derivs. for secondary lithium batteries)

IT Secondary batteries

(lithium; cathodes containing lithium manganese nickel oxides and electrolytes containing phosphazene derivs. for secondary lithium batteries)

IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate

105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate

616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate

7782-42-5, Graphite, uses 12031-75-3, Lithium manganese nickel oxide

(LiMn1.5Ni0.5O4) 14283-07-9, Lithium tetrafluoroborate 21324-40-3,

Lithium hexafluorophosphate

(cathodes containing lithium manganese nickel oxides and electrolytes containing phosphazene derivs. for secondary lithium batteries)

IT 850850-97-6

(cathodes containing lithium manganese nickel oxides and electrolytes containing phosphazene derivs. for secondary lithium batteries)

L66 ANSWER 6 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:347339 HCAPLUS Full-text

DOCUMENT NUMBER: 142:414502

TITLE: Secondary nonaqueous electrolyte battery

INVENTOR(S): Nishie, Katsushi

PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan

SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005036690	A1	20050421	WO 2004-JP15097	20041006
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CN 1871740	A	20061129	CN 2004-80029496	20041006
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US 20070072084	A1	20070329	US 2006-574952	20060407
<--				
PRIORITY APPLN. INFO.:			JP 2003-348134	A 20031007
<--				
			WO 2004-JP15097	W 20041006

ED Entered STN: 22 Apr 2005

AB The battery has an anode which contains a Si-containing material, a cathode, and a nonaq. electrolyte solution; where the electrolyte solution contains a phosphazene derivative

IT 562-88-9 940-71-6 1065-85-9

15599-91-4 602299-92-1 607744-75-2

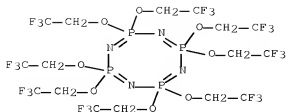
850424-61-2 850427-44-0 850427-45-1

(anode having Si containing material and electrolyte solns.

having phosphazene derivs. for secondary batteries)

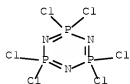
RN 562-88-9 HCAPLUS

CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octahydro-2,2,4,4,6,6,8,8-octakis(2,2,2-trifluoroethoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



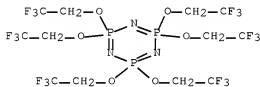
RN 940-71-6 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2, 2, 4, 4, 6, 6-hexachloro- (CA INDEX NAME)



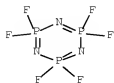
RN 1065-05-0 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2, 2, 4, 4, 6, 6-hexakis(2, 2, 2-trifluoroethoxy)- (CA INDEX NAME)



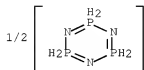
RN 15599-91-4 HCAPLUS

CN 1, 3, 5, 2, 4, 6-Triazatriphosphorine, 2, 2, 4, 4, 6, 6-hexafluoro-2, 2, 4, 4, 6, 6-hexahydro- (CA INDEX NAME)



RN 602299-82-1 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, tetrafluoro-2,2,4,4,6,6-hexahydrobis(2,2,2-trifluoroethoxy)- (9CI) (CA INDEX NAME)

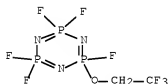


2 ( D1-F )



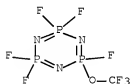
RN 607744-75-2 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentafluoro-6-(2,2,2-trifluoroethoxy)- (CA INDEX NAME)



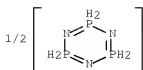
RN 850424-61-2 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentafluoro-2,2,4,4,6-hexahydro-6-(trifluoromethoxy)- (9CI) (CA INDEX NAME)



RN 850427-44-0 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, tetrafluorohexahydrobis(trifluoromethoxy)- (9CI) (CA INDEX NAME)



2 ( D1—F )

F<sub>3</sub>C—O—D1

RN 850427-45-1 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, tetrafluorohexahydro(2,2,2-trifluoroethoxy)(trifluoromethoxy)- (9CI) (CA INDEX NAME)

F<sub>3</sub>C—O—D1

4 ( D1—F )

F<sub>3</sub>C—CH<sub>2</sub>—O—D1

IC ICM H01M010-40

ICS H01M004-02; H01M004-38; H01M004-48; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery anode silicon contg material electrolyte phosphazene deriv

IT Battery electrolytes

Secondary batteries

(anode having Si containing material and electrolyte solns. having phosphazene derivs. for secondary batteries)

IT 96-49-1, Ethylene carbonate 623-53-0, Ethyl methyl carbonate 7631-86-9D, Silicon oxide, nonstoichiometric 7782-42-5, Graphite, uses 21324-40-3, Lithium hexafluorophosphate 52627-24-4, Cobalt lithium oxide

(anode having Si containing material and electrolyte solns. having phosphazene derivs. for secondary batteries)

IT 562-88-9 940-71-6 1065-05-0 7440-21-3,

Silicon, uses 15599-91-4 602299-82-1

607744-75-2 850424-61-2 850427-44-0

850427-45-1

(anode having Si containing material and electrolyte solns. having phosphazene derivs. for secondary batteries)

IT 7440-44-0, Carbon, uses

(mesophase micro beads; anode having Si containing material and electrolyte solns. having phosphazene derivs. for secondary batteries)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 7 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:1156748 HCAPLUS Full-text

DOCUMENT NUMBER: 142:77635

TITLE: Ionic liquids and ionic liquid acids with high temperature stability for fuel cell and other high temperature applications

INVENTOR(S): Angell, C. Austen; Xu, Wu; Belieres, Jean-Philippe; Yoshizawa, Masahiro

PATENT ASSIGNEE(S): Arizona Board of Regents A Body Corporate Acting On Behalf of Arizona State University, USA  
PCT Int. Appl., 76 pp.

SOURCE: CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004114445	A1	20041229	WO 2004-US13719	20040503
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1618618	A1	20060125	EP 2004-751209	20040503
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
JP 2007500429	T	20070111	JP 2006-532544	20040503
<--				
US 20070026295	A1	20070201	US 2005-555468	20051101
<--				
PRIORITY APPLN. INFO.:			US 2003-467796P	P 20030501
			<--	
			US 2003-501626P	P 20030908
			<--	
			WO 2004-US13719	W 20040503

ED Entered STN: 30 Dec 2004

AB Disclosed are developments in high temperature fuel cells including ionic liqs. with high temperature stability and the storage of inorg. acids as di-anion salts of low volatility. The formation of ionically conducting liqs. of



this type having conductivities of unprecedented magnitude for non-aq. systems is described. The stability of the dianion configuration is shown to play a role in the high performance of the noncorrosive proton-transfer ionic liqs. as high temperature fuel cell electrolytes. Performance of simple H<sub>2</sub> (g) electrolyte/O<sub>2</sub> (g) fuel cells with the new electrolytes is described. Superior performance both at ambient temperature and temps. up to and above 200° are achieved. Both neutral proton transfer salts and the acid salts with HSO<sub>4</sub><sup>-</sup> anions, give good results, the bisulfate case being particularly good at low temps. and very high temps. The performance of all electrolytes is improved by the addition of a small amount of nonvolatile base of pK<sub>a</sub> value intermediate between those of the acid and base that make the bulk electrolyte. The preferred case is the imidazole-doped ethylammonium hydrogen sulfate which yields behavior superior in all respects to that of the industry standard phosphoric acid electrolyte.

IT 60717-38-6 (ionic liqs. and ionic liquid acids with high temperature stability for fuel cell and other high temperature applications)  
 RN 60717-38-6 HCAPLUS  
 CN Ethanamine, phosphate (1:1) (CA INDEX NAME)

CM 1

CRN 7664-38-2  
 CMF H3 O4 P



CM 2

CRN 75-04-7  
 CMF C2 H7 N



IC ICM H01M008-00  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST fuel cell ionic liq use; imidazole doped ethylammonium hydrogen sulfate electrolyte fuel cell  
 IT Electric conductivity  
 Fuel cell electrolytes  
 Fuel cells  
 Ionic liquids  
 (ionic liqs. and ionic liquid acids with high temperature stability for fuel cell and other high temperature applications)  
 IT 1341-49-7, Ammonium hydrogen fluoride 2805-17-6 20748-72-5  
 22113-86-6, Ethylammonium nitrate 22113-87-7, Methylammonium nitrate

30781-73-8, Dimethylammonium nitrate 53226-35-0 55145-87-4, uses  
 50717-38-6 71173-55-2 815574-79-9 815574-80-2  
 815574-81-3 815574-82-4 815574-83-5 815574-84-6 815574-85-7  
 815574-86-8

(ionic liqs. and ionic liquid acids with high temperature stability for  
 fuel cell and other high temperature applications)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 8 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:759284 HCAPLUS Full-text

DOCUMENT NUMBER: 141:280357

TITLE: Secondary lithium battery

INVENTOR(S): Takeuchi, Masanobu; Saisho, Keiji; Imachi, Naoki;  
 Yoshimura, Seiji

PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004259524	A	20040916	JP 2003-47385	20030225
			<--	
PRIORITY APPLN. INFO.:			JP 2003-47385	20030225
			<--	

ED Entered STN: 17 Sep 2004

AB The battery has a cathode, containing a cathode material, an anode, containing  
 an anode material, and a nonaq. electrolyte solution, containing an  
 electrolyte salt and a solvent mixture; where the cathode material uses a Li  
 containing Cu phosphate compound

IT 7722-76-3, Dihydrogen ammonium phosphate  
 (cathodes having Li containing Cu phosphate compds. for secondary  
 lithium batteries)

RN 7722-76-1 HCAPLUS

CN Phosphoric acid, ammonium salt (1:1) (CA INDEX NAME)



IC ICM H01M004-58

ICS C22C021-00; H01M002-16; H01M004-02; H01M004-40; H01M010-40;  
 C01B025-45

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)

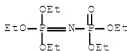
IT 554-13-2, Lithium carbonate 1317-38-0, Copper oxide (CuO), processes

7722-76-1, Dihydrogen ammonium phosphate 7758-98-7, Copper  
sulfate, processes  
(cathodes having Li containing Cu phosphate compds. for secondary  
lithium batteries)

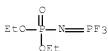
L66 ANSWER 9 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2004:605979 HCAPLUS Full-text  
DOCUMENT NUMBER: 141:149554  
TITLE: Separator for nonaqueous-  
electrolyte double layer capacitor  
INVENTOR(S): Kanno, Hiroshi; Otsuki, Masami; Eguchi, Shinichi  
PATENT ASSIGNEE(S): Bridgestone Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004214356	A	20040729	JP 2002-381018	20021227
			<--	
PRIORITY APPLN. INFO.:			JP 2002-381018	20021227
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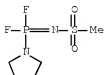
OTHER SOURCE(S): MARPAT 141:149554  
ED Entered STN: 29 Jul 2004  
AB A nonflammable separator for a nonaq.- electrolyte double layer capacitor  
comprises a finely porous film formed by adding a phosphazene derivative (or  
its isomer) to a polymer. Specifically, the polymer may comprise a polyolefin  
such as polyethylene or polypropylene.  
IT 2397-48-0 722454-84-4 722454-85-5  
722454-86-6 724792-60-3  
(separator containing phosphazene derivative for nonaq  
.-electrolyte double layer capacitor)  
RN 2397-48-0 HCAPLUS  
CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA  
INDEX NAME)



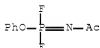
RN 722454-84-4 HCAPLUS  
CN Phosphoramidic acid, (trifluorophosphoranylidene)-, diethyl ester  
(9CI) (CA INDEX NAME)



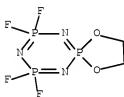
RN 722454-85-5 HCAPLUS

CN Phosphonimidic difluoride, N-(methylsulfonyl)-P-1-pyrrolidinyl- (9CI)  
(CA INDEX NAME)

RN 722454-86-6 HCAPLUS

CN Phosphorodifluoridimidic acid, acetyl-, phenyl ester (9CI) (CA INDEX  
NAME)

RN 724792-60-3 HCAPLUS

CN 5λ5,7λ5,9λ5-1,4-Dioxa-6,8,10-triaza-5,7,9-  
triphosphaspiro[4.5]decane, 7,7,9,9-tetrafluoro- (CA INDEX NAME)

IC ICM H01G009-02

CC 76-10 (Electric Phenomena)

ST phosphazene deriv polymer separator nonaq  
electrolyte double layer capacitor

IT Capacitors

(double layer; separator containing phosphazene derivative for  
nonaq.-electrolyte double layer capacitor)

IT Porous materials

(films; separator containing phosphazene derivative for  
nonaq.-electrolyte double layer capacitor)

IT Films

(porous; separator containing phosphazene derivative for  
nonaq.-electrolyte double layer capacitor)

IT Polyolefins

(separator containing phosphazene derivative for nonaq  
 .-electrolyte double layer capacitor)

IT Phosphazenes  
 (separator containing phosphazene derivative for nonaq  
 .-electrolyte double layer capacitor)

IT 2397-48-0 9002-88-4, Polyethylene 9003-07-0, Polypropylene  
 722454-84-4 722454-85-5 722454-86-6  
 724792-60-3  
 (separator containing phosphazene derivative for nonaq  
 .-electrolyte double layer capacitor)

L66 ANSWER 10 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2004:589783 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:126373  
 TITLE: Separator for nonaqueous  
 electrolyte battery  
 INVENTOR(S): Kanno, Hiroshi; Otsuki, Masashi; Eguchi, Shinichi  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: FIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004062002	A1	20040722	WO 2003-JP16360	20031219
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003289453	A1	20040729	AU 2003-289453	20031219
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EP 1603175	A1	20051207	EP 2003-780936	20031219
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CN 1732580	A	20060208	CN 2003-80107738	20031219
<--				
US 20060073381	A1	20060406	US 2005-540837	20050627
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PRIORITY APPLN. INFO.:			JP 2002-380683	A 20021227
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			WO 2003-JP16360	W 20031219
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ED Entered STN: 23 Jul 2004

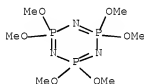
AB The separator, which is incombustible even when the inside of a battery has a high temperature and useful for a primary or secondary Li battery, comprises a micro-porous film formed by adding a phosphazene derivative and/or an isomer of a phosphazene derivative to a polymer.

IT 957-13-1 1184-10-7 2397-48-0  
 33027-68-8 722454-84-4 722454-86-6  
 724792-59-0

(separators containing phosphazene derivative added polymers for  
 primary and secondary lithium batteries)

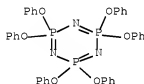
RN 957-13-1 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine  
 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexamethoxy- (CA INDEX  
 NAME)



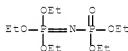
RN 1184-10-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
 2,2,4,4,6,6-hexaphenoxy- (CA INDEX NAME)



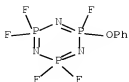
RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA  
 INDEX NAME)



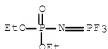
RN 33027-68-8 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
 2,2,4,4,6-pentafluoro-6-phenoxy- (CA INDEX NAME)



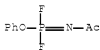
RN 722454-84-4 HCAPLUS

CN Phosphoramidic acid, (trifluorophosphoranylidene)-, diethyl ester (9CI) (CA INDEX NAME)



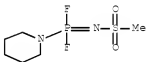
RN 722454-86-6 HCAPLUS

CN Phosphorodifluoridimidic acid, acetyl-, phenyl ester (9CI) (CA INDEX NAME)



RN 724792-59-0 HCAPLUS

CN Phosphonimidic difluoride, N-(methylsulfonyl)-P-1-piperidinyl- (9CI) (CA INDEX NAME)

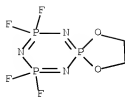


IT 724792-60-3

(separators containing phosphazene derivative added polymers for primary and secondary nonaq. electrolyte batteries)

RN 724792-60-3 HCAPLUS

CN 5λ5,7λ5,9λ5-1,4-Dioxo-6,8,10-triaza-5,7,9-triphosphaspiro[4.5]decane, 7,7,9,9-tetrafluoro- (CA INDEX NAME)



IC ICM H01M002-16  
ICS H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST nonaq electrolyte battery incombustible  
separator phosphazene deriv added polymer  
IT Primary battery separators  
Secondary battery separators  
(separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)  
IT 7439-93-2, Lithium, uses  
(anode; separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)  
IT 1313-13-9, Manganese dioxide, uses 12190-79-3, Cobalt lithium oxide (CoLiO2)  
(cathode; separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)  
IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 957-13-1 1184-10-7 2397-48-0 9002-88-4, Polyethylene 14283-07-9, Lithium tetrafluoroborate 33027-68-8 722454-84-4 722454-86-6 724792-59-0  
(separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)  
IT 724792-60-3  
(separators containing phosphazene derivative added polymers for primary and secondary nonaq. electrolyte batteries)

L66 ANSWER 11 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2004:570217 HCAPLUS [Full-text](#)  
DOCUMENT NUMBER: 141:126304  
TITLE: Additive for secondary battery nonaqueous electrolyte solution and the battery  
INVENTOR(S): Otsuki, Masashi; Horikawa, Yasuro  
PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
SOURCE: PCT Int. Appl., 33 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004059782	A1	2004/07/15	WO 2003-JP16592	20031224

&lt;--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,



CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
 KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
 MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,  
 SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,  
 VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,  
 DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,  
 SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
 MR, NE, SN, TD, TG

AU 2003292764 A1 20040722 AU 2003-292764 20031224

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EP 1580832 A1 20050928 EP 2003-768180 20031224

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN 1732588 A 20060208 CN 2003-80107739 20031224

<--

US 20060046151 A1 20060302 US 2005-540558 20050624

<--

PRIORITY APPLN. INFO.: JP 2002-377142 A 20021226

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WO 2003-JP16592 W 20031224

<--

ED Entered STN: 16 Jul 2004

AB The additive comprises a phosphazene derivative represented by R13P = N-X (R1 = halo or monovalent substituent; and X = C, Si, N, P, O and/or S containing organic group). The battery has a nonaq. electrolyte solution comprising the above additive, a cathode, and an anode.

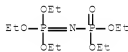
IT 2397-48-0 722454-84-4 722454-85-5

722454-86-6

(additives containing phosphazene derivs. for secondary battery electrolytes)

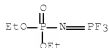
RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)

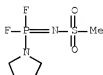


RN 722454-84-4 HCAPLUS

CN Phosphoramidic acid, (trifluorophosphoranylidene)-, diethyl ester (9CI) (CA INDEX NAME)



RN 722454-85-5 HCAPLUS

CN Phosphonimidic difluoride, N-(methylsulfonyl)-P-1-pyrrolidinyl- (9CI)  
(CA INDEX NAME)

RN 722454-86-6 HCAPLUS

CN Phosphorodifluoridimidic acid, acetyl-, phenyl ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery nonaq electrolyte  
additive phosphazene derivIT Battery electrolytes  
(additives containing phosphazene derivs. for secondary battery electrolytes)IT Secondary batteries  
(lithium; additives containing phosphazene derivs. for secondary battery electrolytes)IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
12190-79-3, Cobalt lithium oxide (CoLiO2) 21324-40-3, Lithium  
hexafluorophosphate  
(additives containing phosphazene derivs. for secondary battery electrolytes)IT 2397-48-0 722454-84-4 722454-85-5  
722454-86-6  
(additives containing phosphazene derivs. for secondary battery electrolytes)REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L66 ANSWER 12 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:510461 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:57071

TITLE: Organic onium salts bearing asymmetric anions,  
their nonaqueous electrolytes,  
and electrochemical devices

INVENTOR(S): Nagakura, Naoto; Iwata, Arihiro

PATENT ASSIGNEE(S): Tokuyama Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004175668	A	20040624	JP 2002-339969	20021122
			<--	
PRIORITY APPLN. INFO.:			JP 2002-339969	20021122
			<--	

OTHER SOURCE(S): MARPAT 141:57071

ED Entered STN: 24 Jun 2004

AB The salts are [R1OS(O)2]R2N-.Z+ [R1 = (halo-substituted) hydrocarbyl; R2 = R3OS(O)2, R4S(O)2, R5CO, cyano; R3-R5 = (halo-substituted) alkyl; R1 ≠ R3; Z+ = organic onium cation]. The salts, useful as electrolytes for primary or secondary Li batteries, solar cells, capacitors, etc., are liqs. at room temperature and show high elec. conductivity

IT 705948-62-5P  
 (organic onium salts bearing asym. anions as nonaq. electrolytes for electrochem. devices)

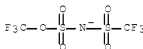
RN 705948-62-5 HCAPLUS

CN Phosphonium, tetraethyl-, trifluoromethyl N-  
 [(trifluoromethyl)sulfonyl]sulfamate (1:1) (CA INDEX NAME)

CM 1

CRN 705948-58-9

CMF C2 F6 N O5 S2



CM 2

CRN 13983-95-4

CMF C8 H20 P



IC ICM C07C311-03

ICS C07C211-63; C07D233-61; C07F009-54; H01G009-00; H01G009-038;

H01L031-04; H01M006-16; H01M010-40; H01M014-00  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 23, 28, 76  
 ST asym anion onium salt nonaq electrolyte;  
 electrochem device asym anion onium salt; fluoromethylsulfonyl  
 fluoromethoxysulfonyl imide nonaq electrolyte  
 electrochem device  
 IT Electric apparatus  
 (electrochem.; organic onium salts bearing asym. anions as  
 nonaq. electrolytes for electrochem. devices)  
 IT Electrolytes  
 (organic onium salts bearing asym. anions as nonaq.  
 electrolytes for electrochem. devices)  
 IT 705948-59-0P 705948-60-3P 705948-61-4P 705948-62-5P  
 705948-64-7P 705948-65-8P 705948-66-9P 705948-68-1P  
 705948-69-2P 705948-70-5P  
 (organic onium salts bearing asym. anions as nonaq.  
 electrolytes for electrochem. devices)  
 IT 705948-57-8P  
 (organic onium salts bearing asym. anions as nonaq.  
 electrolytes for electrochem. devices)  
 IT 354-38-1, Trifluoroacetamide 420-04-2, Cyanamide 421-85-2,  
 Trifluoromethanesulfonamide  
 (organic onium salts bearing asym. anions as nonaq.  
 electrolytes for electrochem. devices)

L66 ANSWER 13 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:252760 HCAPLUS Full-text

DOCUMENT NUMBER: 140:294908

TITLE: An improved electrochromic or electrodeposition  
 display and novel process for their manufacture  
 INVENTOR(S): Liang, Rong-chang; Hou, Jack; Ananthavel,  
 Sundaravel P.

PATENT ASSIGNEE(S): Sipix Imaging, Inc., USA

SOURCE: PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004025356	A2	20040325	WO 2003-US28540	20030910
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WO 2004025356	A3	20040722		
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CN 1482509	A	20040317	CN 2003-100505	20030109

AU 2003270567 A1 20040430 AU 2003-270567 20030910  
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 EP 1537450 A2 20050608 EP 2003-752268 20030910  
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 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
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 JP 2005538424 T 20051215 JP 2004-536513 20030910  
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 US 20060139724 A1 20060629 US 2003-660381 20030910  
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 US 7245414 B2 20070717  
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 WO 2003-US28540 W 20030910  
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ED Entered STN: 26 Mar 2004

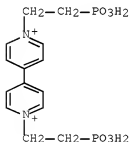
AB An electrochromic or electrodeposition display is described comprising a plurality of cells enclosed between the two electrodes, each of the cells comprising (i) surrounding partition walls (microcup) , (ii) an electrochromic fluid or electrolytic fluid (e.g., silver nitrate in a polymer matrix) filled therein, and (iii) a polymeric sealing layer which encloses the electrochromic fluid or electrolytic fluid within each cell and sealingly adheres to the surface of the partition walls. The display device may also have a top electrode plate and a bottom electrode plate, at least one of which is transparent. A method of preparing an electrochromic or electrodeposition display is also described entailing (a) embossing a thermoplastic or thermoset precursor layer with a pre-patterned male mold; (b) hardening the thermoplastics or thermoset precursor layer; (c) releasing the mold from the thermoplastic or thermoset precursor layer; (d) filling the thus-formed array of microcups with an electrochromic or electrodeposition fluid; and (e) sealing the filled microcups.

IT 151538-79-3, Bis(2-phosphonoethyl)-4,4'-bipyridinium dichloride

(redox chromophore; electrochromic or electrodeposition display and fabrication method)

RN 151538-79-3 HCAPLUS

CN 4,4'-Bipyridinium, 1,1'-bis(2-phosphonoethyl)-, chloride (1:2) (CA INDEX NAME)



● 2 Cl<sup>-</sup>

IC ICM G02F001-00

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other

- Reprographic Processes)  
 Section cross-reference(s): 72, 76
- IT Gelatins, uses  
 Polyoxymethylenes, uses  
 (electrolytic fluid; electrochromic or electrodeposition display and fabrication method)
- IT 931-40-8, Glycerin carbonate  
 (Glycerin carbonate, non-aqueous solvent; electrochromic or electrodeposition display and fabrication method)
- IT 7791-03-9, Lithium perchlorate 33454-82-9, Lithium triflate 35895-70-6, Tetrabutylammonium triflate  
 (electrolyte; electrochromic or electrodeposition display and fabrication method)
- IT 7761-88-8, Silver nitrate, uses 9000-01-5, Gum Arabic 9003-39-8, Polyvinylpyrrolidone 9004-62-0, Hydroxyethyl cellulose 9004-64-2, Hydroxypropyl cellulose 9004-67-5, Methyl cellulose 25322-68-3, Poly(ethylene oxide)  
 (electrolytic fluid; electrochromic or electrodeposition display and fabrication method)
- IT 67-68-5, Dimethylsulfoxide, uses 68-12-2, Dimethyl formamide, uses 75-05-8, Acetonitrile, uses 96-48-0,  $\gamma$ -Butyrolactone 108-32-7, Propylene carbonate 109-86-4, 2-Methoxyethanol 109-87-5, Dimethoxymethane 110-80-5, 2-Ethoxyethanol 127-19-5, N, N-Dimethylacetamide 617-84-5, Diethyl formamide 872-50-4, N-Methylpyrrolidone, uses 1187-58-2, N-Methylpropionic acid amide 4553-62-2, 2-Methylglutaronitrile  
 (non-aqueous solvent; electrochromic or electrodeposition display and fabrication method)
- IT 151538-79-3, Bis(2-phosphonoethyl)-4,4'-bipyridinium dichloride  
 (redox chromophore; electrochromic or electrodeposition display and fabrication method)

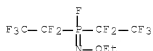
L66 ANSWER 14 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2004:139816 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 140:184695  
 TITLE: Secondary nonaqueous electrolyte battery  
 INVENTOR(S): Narioka, Yoshinori; Mori, Sumio  
 PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004055208	A	20040219	JP 2002-208280	20020717
			<--	
PRIORITY APPLN. INFO.:			JP 2002-208280	20020717
			<--	

- ED Entered STN: 20 Feb 2004
- AB The battery has an active mass containing anode and a Li salt dissolved non-aq. electrolyte solution; where the electrolyte solution has a halo-containing phosphazene compound and the anode has a binder comprising a non-halo material.
- IT 657248-91-9  
 (electrolyte solns. having halo-containing phosphazene

compds. for secondary lithium batteries)

RN 657348-91-9 HCAPLUS

CN Phosphinimidic fluoride, N-ethoxy-P,P-bis(pentafluoroethyl)- (9CI)  
(CA INDEX NAME)

IC ICM H01M010-40

ICS H01M004-02; H01M004-62

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery electrolyte halo contg phosphazene compd;  
anode binder nonhalo compd secondary battery

IT Battery electrolytes

(electrolyte solns. having halo-containing phosphazene compds. for secondary lithium batteries)

IT Secondary batteries

(secondary lithium batteries having halo-containing phosphazene compds. in electrolyte solns. and non-halo materials in anodes)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate

21324-40-3, Lithium hexafluorophosphate 657348-91-9

(electrolyte solns. having halo-containing phosphazene compds. for secondary lithium batteries)

L66 ANSWER 15 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:78024 HCAPLUS Full-text

DOCUMENT NUMBER: 140:131119

TITLE: Secondary nonaqueous electrolyte battery

INVENTOR(S): Suzuki, Hitoshi; Takeuchi, Sachie; Suzuki, Hirofumi

PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004031079	A	20040129	JP 2002-184780	20020625
			<--	
PRIORITY APPLN. INFO.:			JP 2002-184780	20020625
			<--	

ED Entered STN: 30 Jan 2004

AB The battery has an anode, containing a material capable of intercalating and deintercalating Li, a cathode, and a nonaq. electrolyte solution, containing a nonaq. solvent mixture and a Li salt; where the electrolyte solution contains a difluorophosphate salt  $\text{M}(\text{PO}_2\text{F}_2)_x$  [M = metal having M-F bond dissociation energy  $\leq 560$  kJ/mol or NR4 (R = H or C1-12 organic group and may be bonded to

each other directly or via N to form a ring); If M = metal, x = valence  $\geq 1$ ; If M = NR<sub>4</sub>, x = 1].

IT 665-47-4  
(electrolyte solns. containing difluorophosphate salts for secondary lithium batteries)  
RN 665-47-4 HCAPLUS  
CN Ethanaminium, N,N,N-triethyl-, phosphorodifluoridate (9CI) (CA INDEX NAME)  
CM 1  
CRN 20410-46-2  
CMF F2 O2 P



CM 2  
CRN 66-40-0  
CMF C8 H20 N



IC ICM H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST secondary lithium battery electrolyte soln difluorophosphate salt  
IT Battery electrolytes  
(electrolyte solns. containing difluorophosphate salts for secondary lithium batteries)  
IT Secondary batteries  
(lithium; electrolyte solns. containing difluorophosphate salts for secondary lithium batteries)  
IT 12031-65-1, Lithium nickel oxide (LiNiO<sub>2</sub>)  
(cathode; electrolyte solns. containing difluorophosphate salts for secondary lithium batteries)  
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 21324-40-3, Lithium hexafluorophosphate  
(electrolyte solns. containing difluorophosphate salts for secondary lithium batteries)  
IT 665-47-4 13767-90-3 15587-24-3  
(electrolyte solns. containing difluorophosphate salts for secondary lithium batteries)



IT 7782-42-5, Graphite, uses  
(synthetic; anode; electrolyte solns. containing  
difluorophosphate salts for secondary lithium batteries)

L66 ANSWER 16 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2004:59637 HCAPLUS Full-text  
DOCUMENT NUMBER: 140:79861  
TITLE: Method of fabrication of lithium secondary battery  
INVENTOR(S): Lee, Jin-young; Lee, Kyoung-hee  
PATENT ASSIGNEE(S): S. Korea  
SOURCE: U.S. Pat. Appl. Publ., 7 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040013944	A1	20040122	US 2003-617811	20030714
			<--	
KR 2004006781	A	20040124	KR 2002-41169	20020715
			<--	
JP 2004039642	A	20040205	JP 2003-274506	20030715
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CN 1501542	A	20040602	CN 2003-165003	20030715
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PRIORITY APPLN. INFO.:			KR 2002-41169	A 20020715
			<--	

ED Entered STN: 23 Jan 2004

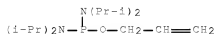
AB A lithium secondary battery of the present invention comprises a pos. electrode; a neg. electrode; a separator interposed between the pos. and neg. electrodes; and an electrolyte on the separator, wherein the electrolyte includes a nonaq. organic solvent, a lithium salt, and a linear polymer having P=O bonds. The electrolyte improves the swelling characteristics of lithium secondary batteries. A lithium secondary battery with the electrolyte and a method for preparing the electrolyte and battery is described.

IT 108554-72-9

(method of fabrication of lithium secondary battery)

RN 108554-72-9 HCAPLUS

CN Phosphorodiamidous acid, N,N,N',N'-tetrakis(1-methylethyl)-, 2-propen-1-yl ester (CA INDEX NAME)



IC ICM H01M010-40

INCL 429317000; 429307000; 429338000; 429342000; 429314000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery electrolytes

Swelling, physical

(method of fabrication of lithium secondary battery)

IT 78-67-1, Azobisisobutyronitrile 682-30-4, Diethyl vinyl phosphonate 4472-22-4, Dipropyl vinyl phosphonate 4645-32-3, Dimethyl vinyl phosphonate 4851-64-3, Diethyl vinyl phosphate 24599-21-1

41891-54-7, Triethyl 3-methyl-4-phosphonocrotonate 108554-72-9  
 113187-28-3, Allyl diethyl phosphonoacetate  
 (method of fabrication of lithium secondary battery)

L66 ANSWER 17 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2004:3212 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:62300  
 TITLE: Supporting salt for battery, its manufacture, and the battery  
 INVENTOR(S): Otsuki, Masashi; Eguchi, Shinichi; Kanno, Hiroshi  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 83 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004001882	A1	20031231	WO 2003-JP7352	20030610
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003242210	A1	20040106	AU 2003-242210	20030610
<--				
EP 1517387	A1	20050323	EP 2003-736121	20030610
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK CN 1669165 A 20050914 CN 2003-817186 20030610				
<--				
US 20050164093	A1	20050728	US 2004-518634	20041220
<--				
PRIORITY APPLN. INFO.:			JP 2002-178693	A 20020619
<--				
			JP 2002-178772	A 20020619
<--				
			WO 2003-JP7352	W 20030610
<--				

OTHER SOURCE(S): MARPAT 140:62300  
 ED Entered STN: 02 Jan 2004

AB The salt comprises a phosphazene compound (NPA12)3 (I) or A13P:NP(O)A12 (II; A1 = NRLi or F where  $\geq 1$  A1 is NRLi and R = monovalent substituent) and I is manufactured by forming a phosphazene derivative by reacting a fluoro or chloro phosphazene derivative with a primary amine and adding Li alkoxide to form the compound and II is manufactured by forming a phosphazene derivative by reacting a chloro or fluoro phosphazene derivative with a primary amine and adding Li alkoxide to form the compound. The battery has a cathode, an anode, and a non-aq. electrolyte solution containing an aprotic organic solvent and

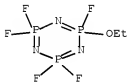
the above salt. Another type of the battery has an electrolyte containing a polymer and the above salt.

IT 33027-66-6 55593-38-9 134435-36-2  
485399-26-6 593994-52-1 639065-14-8  
639065-15-9 633067-35-9 639067-36-0  
639067-37-1

(manufacture of supporting salts containing phosphazene derivs. for battery electrolytes)

RN 33027-66-6 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2-ethoxy-2, 4, 4, 6, 6-pentafluoro- (CA INDEX NAME)



RN 55593-38-9 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
diethoxytetrafluoro- (CA INDEX NAME)

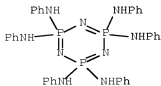


4 ( D1—F )

2 ( D1—O—Et )

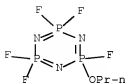
RN 134435-36-2 HCAPLUS

CN 1, 3, 5, 2, 4, 6-Triazatriphosphorine, 2, 2, 4, 4, 6, 6-hexahydro-2, 2, 4, 4, 6, 6-hexakis(phenylamino)-, hexalithium salt (9CI) (CA INDEX NAME)

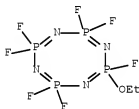


●6 Li

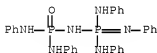
RN 485399-26-6 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2, 2, 4, 4, 6-pentafluoro-6-propoxy- (CA INDEX NAME)

RN 593094-52-1 HCAPLUS

CN 2λ5, 4λ5, 6λ5, 8λ5-1, 3, 5, 7, 2, 4, 6, 8-  
Tetrazatetraphosphocine, 2-ethoxy-2, 4, 4, 6, 6, 8, 8-heptafluoro- (CA  
INDEX NAME)

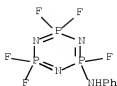
RN 639065-14-8 HCAPLUS

CN Iminoimidodiphosphoramidate, N,N',N'',N''',N''''-pentaphenyl-,  
pentalithium salt (9CI) (CA INDEX NAME)

●5 Li

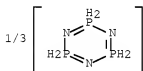
RN 639065-15-9 HCAPLUS

CN 1, 3, 5, 2, 4, 6-Triazatriphosphorin-2-amine, 2, 4, 4, 6, 6-pentafluoro-N-  
phenyl-, lithium salt (1:1) (CA INDEX NAME)



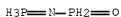
RN 639067-35-9 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, trifluoro-2,2,4,4,6,6-hexahydrotris(phenylamino)-, trilithium salt (9CI) (CA INDEX NAME)



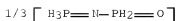
RN 639067-36-0 HCAPLUS

CN Phosphinic amide, N-phosphoranylidene-, tetrafluoro phenylamino deriv., lithium salt (9CI) (CA INDEX NAME)



RN 639067-37-1 HCAPLUS

CN Phosphinic amide, N-phosphoranylidene-, difluoro tris(phenylamino) deriv., trilithium salt (9CI) (CA INDEX NAME)



D1—NH—Ph

2/3 ( D1—F )

●<sub>3</sub> Li

IC ICM H01M006-16  
 ICS H01M006-18; H01M010-40; H01B001-06; C07F019-00; C07F009-26;  
 C07F009-6593; C07F001-02  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)  
 Section cross-reference(s): 29  
 ST battery electrolyte salt manuf phosphazene deriv  
 IT Polyoxyalkylenes, uses  
 (manufacture of supporting salts containing phosphazene derivs. for battery  
 electrolytes)  
 IT 7439-93-2, Lithium, uses  
 (anode; manufacture of supporting salts containing phosphazene derivs. for  
 battery electrolytes)  
 IT 1313-13-9, Manganese dioxide, uses 52627-24-4, Cobalt lithium oxide  
 (cathode; manufacture of supporting salts containing phosphazene derivs.  
 for  
 battery electrolytes)  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,  
 Propylene carbonate 110-71-4 25322-68-3, Polyethylene oxide  
 33027-66-6 55593-36-9 134435-36-2  
 485339-26-6 593094-52-1 639065-14-8  
 639065-15-9 639067-35-9 639067-36-0  
 639067-37-1  
 (manufacture of supporting salts containing phosphazene derivs. for battery  
 electrolytes)  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 18 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:778146 HCAPLUS Full-text  
 DOCUMENT NUMBER: 139:294650  
 TITLE: Positive electrode for nonaqueous  
 electrolyte battery, process for producing  
 the same and nonaqueous  
 electrolyte battery  
 INVENTOR(S): Otsuki, Masashi; Eguchi, Shinichi; Kanno, Hiroshi  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 65 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003081699	A1	20031002	WO 2003-JP1737	20030218
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2003249233	A	20030905	JP 2002-47991	20020225
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JP 2003249213	A	20030905	JP 2002-48122	20020225
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AU 2003211452	A1	20031008	AU 2003-211452	20030218
<--				
EP 1492181	A1	20041229	EP 2003-705293	20030218
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004006301	A	20040108	JP 2003-104299	20030408
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US 20050106460	A1	20050519	US 2004-505422	20040824
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US 20080164444	A1	20080710	US 2008-46164	20080311
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PRIORITY APPLN. INFO.:			JP 2002-47991	A 20020225
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			JP 2002-48122	A 20020225
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			JP 2002-108024	A 20020410
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			WO 2003-JP1737	W 20030218
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			US 2004-505422	B3 20040824

OTHER SOURCE(S): MARPAT 139:294650

ED Entered STN: 03 Oct 2003

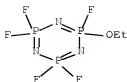
AB A pos. electrode of nonaq. electrolyte battery comprises active substance particles and, dispersed therebetween, at least one metal oxide selected from the group consisting of titanium dioxide, alumina, zinc oxide, chromium oxide, lithium oxide, nickel oxide, copper oxide and iron oxide. The disclosed batteries contain electrode active substance selected from MnO<sub>2</sub>, LiCoO<sub>2</sub>, LiNiO<sub>2</sub> and LiMn<sub>2</sub>O<sub>4</sub>, and the nonaq. electrolyte solution may contain phosphazene derivs. This pos. electrode enables enhancing the discharge capacity or charge-discharge capacity of nonaq. electrolyte battery.

IT 33027-66-6 33027-67-7 55593-36-9  
593094-52-1 607744-75-2

(phosphazene derivative additives for nonaq. battery electrolytes)

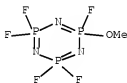
RN 33027-66-6 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2-ethoxy-2, 4, 4, 6, 6-pentafluoro- (CA INDEX NAME)



RN 33027-67-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
2,2,4,4,6-pentafluoro-6-methoxy- (CA INDEX NAME)



RN 55593-38-9 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
diethoxytetrafluoro- (CA INDEX NAME)



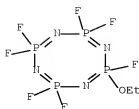
4 ( D1—F )

2 ( D1—O—Et )

RN 593094-52-1 HCAPLUS

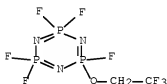
CN 2λ5,4λ5,6λ5,8λ5-1,3,5,7,2,4,6,8-  
Tetrazatetraphosphocine, 2-ethoxy-2,4,4,6,6,8,8-heptafluoro- (CA  
INDEX NAME)





RN 607744-75-2 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
2,2,4,4,6-pentafluoro-6-(2,2,2-trifluoroethoxy)- (CA INDEX NAME)



IC ICM H01M004-62

ICS H01M004-06; H01M006-16; H01M004-02; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST nonaq electrolyte battery anode metal oxide additive

IT Secondary batteries (lithium, nonaq electrolyte; nonaq)

IT Primary batteries (nonaq electrolyte; additives anode active compns. and electrolyte for)

IT 12031-65-1, Lithium nickel oxide (LiNiO2) 12057-17-9, Lithium manganese oxide (LiMnO4) 12190-79-3, Lithium cobalt oxide (LiCoO2) (metal oxide additives for nonaq. battery anode containing active substance)

IT 1313-99-1, Nickel oxide, uses 1314-13-2, Zinc oxide, uses 1332-37-2, Iron oxide, uses 1344-28-1, Alumina, uses 1344-70-3, Copper oxide 11118-57-3, Chromium oxide 12057-24-8, Lithium oxide, uses 13463-67-7, Titanium dioxide, uses (metal oxide additives for nonaq. battery anodes)

IT 1313-13-9, Manganese dioxide, uses (metal oxide additives for nonaq. battery anodes containing active substance)

IT 33627-66-6 33027-67-7 55593-38-9 593094-52-1 607744-75-2 (phosphazine derivative additives for nonaq. battery electrolytes)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 19 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:715869 HCAPLUS Full-text

DOCUMENT NUMBER: 139:216954  
 TITLE: Manufacture of olivine-type iron-containing manganese lithium phosphate and nonaqueous electrolyte secondary battery using the same  
 INVENTOR(S): Numata, Koichi; Kamata, Tsuneyoshi; Malinov, Todorov Janko; Hayashi, Tomio  
 PATENT ASSIGNEE(S): Mitsui Mining and Smelting Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003257429	A	20030912	JP 2002-57134	20020304
			<--	
PRIORITY APPLN. INFO.:			JP 2002-57134	20020304
			<--	

ED Entered STN: 12 Sep 2003

AB The process is for manufacturing olivine-type iron-containing manganese lithium phosphate containing Fe 15-45 mol% with respect to Mn, wherein Fe-containing manganese composite oxide obtained by co-precipitation of Fe and Mn is used as a raw material. The olivine-type iron-containing manganese lithium phosphate is used as a pos. electrode active substance of the nonaq. electrolyte secondary battery, and is less costly and also is able to maintain the high energy d. even after the recycling.

IT 7783-28-0, Ammonium hydrogen phosphate  
 (manufacture of olivine-type iron-containing manganese lithium phosphate

for nonaq. electrolyte secondary battery)

RN 7783-28-0 HCAPLUS

CN Phosphoric acid, ammonium salt (1:2) (CA INDEX NAME)



●2 NH3

IC ICM H01M004-58

ICS C01B025-45; H01M004-02; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST olivine iron manganese lithium phosphate; nonaq electrolyte lithium secondary battery pos electrode

IT Secondary batteries  
 (lithium; manufacture of olivine-type iron-containing manganese lithium phosphate for nonaq. electrolyte secondary battery)

IT Battery electrodes

(manufacture of olivine-type iron-containing manganese lithium phosphate  
for  
nonaq. electrolyte secondary battery)  
IT 554-13-2, Lithium carbonate 7783-28-0, Ammonium hydrogen  
phosphate 11115-91-6, Iron manganese oxide  
(manufacture of olivine-type iron-containing manganese lithium phosphate  
for  
nonaq. electrolyte secondary battery)  
IT 53027-29-5, Iron lithium manganese oxide  
(manufacture of olivine-type iron-containing manganese lithium phosphate  
for  
nonaq. electrolyte secondary battery)

L66 ANSWER 20 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:473087 HCAPLUS Full-text

DOCUMENT NUMBER: 139:39170

TITLE: Phosphate additives for nonaqueous  
electrolyte rechargeable electrochemical  
cells

INVENTOR(S): Gan, Hong; Takeuchi, Esther S.; Rubino, Robert

PATENT ASSIGNEE(S): Wilson Greatbatch Technologies, Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 11 pp., Cont.-in-part of  
U.S. -723,059.

CODEN: USXXCO

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20030113635	A1	20030619	US 2002-251137	20020920
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US 6919141	B2	20050719		
US 6203942	B1	20010320	US 1999-303877	19990503
			<--	
PRIORITY APPLN. INFO.:			US 1998-105279P	P 19981022
			<--	
			US 1999-303877	A2 19990503
			<--	
			US 2000-723059	A2 20001127
			<--	

ED Entered STN: 20 Jun 2003

AB A lithium ion electrochem. cell having high charge/discharge capacity, long  
cycle life and exhibiting a reduced first cycle irreversible capacity, is  
disclosed. The stated benefits are realized by the addition of at least one  
phosphate additive having the formula: (R1O)P(=O)(OR2)(OR3) and wherein R1,  
R2 and R3 are the same or different, wherein at least one, but not all three,  
of the R groups is hydrogen, or at least one of the R groups has at least 3  
carbon atoms and contains an sp or sp2 hybridized carbon atom bonded to an sp3  
hybridized carbon atom bonded to the oxygen atom bonded to the phosphorous  
atom.

IT 433979-69-2, Phosphoric acid, dimethyl nitromethyl ester

433979-71-6, Phosphoric acid, cyanomethyl dimethyl ester

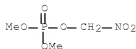
433979-72-7, Phosphoric acid, bis(cyanomethyl) methyl ester

(phosphate additives for nonaq. electrolyte

rechargeable electrochem. cells)

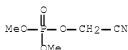
RN 433979-69-2 HCAPLUS

CN Phosphoric acid, dimethyl nitromethyl ester (CA INDEX NAME)



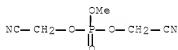
RN 433979-71-6 HCAPLUS

CN Phosphoric acid, cyanomethyl dimethyl ester (CA INDEX NAME)



RN 433979-72-7 HCAPLUS

CN Phosphoric acid, bis(cyanomethyl) methyl ester (CA INDEX NAME)



IC ICM H01M010-40

INCL 429326000; 429342000; 429330000; 429231800; 429217000; 429232000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST phosphate additive nonaq electrolyte rechargeable battery

IT Secondary batteries

(lithium; phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)

IT Battery electrolytes

Secondary batteries

(phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)

IT Carbon black, uses

Carbon fibers, uses

Coke

(phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)

IT Fluoropolymers, uses

(phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)

IT 7440-44-0, Carbon, uses

(glassy; phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate

556-65-0, Lithium thiocyanate 872-36-6, Vinylene carbonate

- 2923-17-3 2923-20-8 4437-85-8, Butylene carbonate 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 7790-69-4, Lithium nitrate 7791-03-9, Lithium perchlorate 11113-67-0, Iron lithium oxide 11126-15-1, Lithium vanadium oxide 12031-63-9, Lithium niobium oxide (LiNbO<sub>3</sub>) 12680-08-9, Lithium titanium sulfide 13453-75-3, Lithium fluorosulfate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenyl borate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 37296-91-6, Lithium molybdenum oxide 37367-96-7, Lithium molybdenum sulfide 39300-70-4, Lithium nickel oxide 39302-37-9, Lithium titanium oxide 39457-42-6, Lithium manganese oxide 51177-06-1, Chromium lithium oxide 52627-24-4, Cobalt lithium oxide 56321-19-8, Lithium niobium sulfide 61673-65-2, Lithium niobium selenide 61673-69-6, Lithium titanium selenide 61673-70-9, Lithium titanium telluride 61673-71-0, Lithium vanadium selenide 74245-06-0, Lithium vanadium sulfide 80341-49-7, Iron lithium sulfide 90076-65-6 96352-80-6, Lithium molybdenum selenide 96352-81-7, Lithium molybdenum telluride 103288-79-5, Cobalt lithium sulfide 104708-77-2, Copper lithium oxide 115028-88-1 132404-42-3 148884-75-7, Cobalt lithium selenide 264142-74-7, Lithium vanadium telluride 264142-75-8, Chromium lithium sulfide 264142-76-9, Chromium lithium selenide 264142-77-0, Chromium lithium telluride 264142-78-1, Copper lithium sulfide 264142-79-2, Copper lithium selenide 264142-80-5, Copper lithium telluride 264142-81-6, Lithium niobium telluride 264142-82-7, Iron lithium selenide 264142-83-8, Iron lithium telluride 264142-84-9, Lithium nickel sulfide 264142-85-0, Lithium nickel selenide 264142-86-1, Lithium nickel telluride 264142-87-2, Cobalt lithium telluride 264142-88-3, Lithium manganese sulfide 264142-89-4, Lithium manganese selenide 264142-90-7, Lithium manganese telluride (phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)
- IT 105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 1623-07-0, Benzyl phosphate 1623-08-1, Dibenzyl phosphate 1623-10-5, Diallyl methyl phosphate 1623-11-6, Allyl dimethyl phosphate 1623-19-4, Triallyl phosphate 1707-92-2, Tribenzyl phosphate 1779-34-6, Tripropargyl phosphate 7748-09-6, Diallyl phosphate 25022-72-4, Allyl phosphate 26292-51-3, Phosphoric acid, methyl bis(phenylmethyl) ester 35363-40-7, Ethyl propyl carbonate, uses 55343-62-9, Propargyl phosphate 56379-74-9 56525-42-9, Methyl propyl carbonate, uses 67293-73-6, Benzyl methyl phosphate 433979-69-2, Phosphoric acid, dimethyl nitromethyl ester 433979-70-5, Dipropargyl phosphate 433979-71-6, Phosphoric acid, cyanomethyl dimethyl ester 433979-72-7, Phosphoric acid, bis(cyanomethyl) methyl ester (phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)
- IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 12597-68-1, Stainless steel, uses (powder; phosphate additives for nonaq. electrolyte rechargeable electrochem. cells)
- REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

DOCUMENT NUMBER: 138:371761  
 TITLE: Primary nonaqueous electrolyte battery and additive for the battery electrolyte  
 INVENTOR(S): Otsuki, Masashi; Eguchi, Shinichi; Kanno, Yushi  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 101 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003041197	A1	20030515	WO 2002-JP11173	20021028
<--				
W: CA, JP, KR, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
CA 2465845	A1	20030515	CA 2002-2465845	20021028
<--				
EP 1443578	A1	20040804	EP 2002-775406	20021028
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
US 20050123836	A1	20050609	US 2004-494936	20040507
<--				
PRIORITY APPLN. INFO.:			JP 2001-341464	A 20011107
<--				
			JP 2001-371305	A 20011205
<--				
			JP 2001-371356	A 20011205
<--				
			JP 2001-371378	A 20011205
<--				
			JP 2001-371499	A 20011205
<--				
			WO 2002-JP11173	W 20021028
<--				

OTHER SOURCE(S): MARPAT 138:371761  
 ED Entered STN: 16 May 2003  
 GI



AB The battery uses a nonaq. electrolyte solution containing a supporting salt and a phosphazene derivative additive having viscosity  $\leq 100$  cP at 25°. The electrolyte solution may contain an aprotic solvent. The additive is preferably I (R1-3 = monovalent substituent or halogen, X1 = organic group containing C, Si, Ge, Sn, N, P, As, Sb, Bi, O, S, Se, Te, and/or Po), Y1-3 =

linking group, bond, element or II (R4 = monovalent substituent or halogen, and may differ from each, n = 3-15).

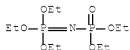
IT 2397-48-0 3654-42-0 97682-87-6

324575-25-9 524699-03-4

(phosphazene derivative additives in electrolytes for primary lithium batteries)

RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



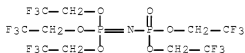
RN 3654-42-0 HCAPLUS

CN Imidodiphosphoric acid, ethyl-, tetraethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



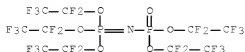
RN 97682-87-6 HCAPLUS

CN Phosphorimidic acid, [bis(2,2,2-trifluoroethoxy)phosphinyl]-, tris(2,2,2-trifluoroethyl) ester (9CI) (CA INDEX NAME)

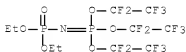


RN 324575-25-9 HCAPLUS

CN Phosphorimidic acid, [bis(pentafluoroethoxy)phosphinyl]-, tris(pentafluoroethyl) ester (9CI) (CA INDEX NAME)



RN 524699-03-4 HCAPLUS  
 CN Phosphorimidic acid, (diethoxyphosphinyl)-, tris(pentafluoroethyl)  
 ester (9CI) (CA INDEX NAME)



IC ICM H01M006-16  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)  
 ST primary nonaq battery electrolyte soln phosphazene  
 additive  
 IT Battery electrolytes  
 (phosphazene derivative additives in electrolytes for primary  
 lithium batteries)  
 IT 96-48-0,  $\gamma$ -Butyrolactone 108-32-7, Propylene carbonate  
 616-38-6, Dimethyl carbonate 90076-65-6  
 (phosphazene derivative additives in electrolytes for primary  
 lithium batteries)  
 IT 2397-48-0 3654-42-0 28655-96-1,  
 Poly[nitrilo(difluorophosphoranylidene)] 28655-96-1D,  
 Poly[nitrilo(difluorophosphoranylidene)], alkyl alkoxy or Ph  
 substituted, fluoro derivs. 97682-87-6 324575-25-9  
 524699-03-4  
 (phosphazene derivative additives in electrolytes for primary  
 lithium batteries)  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 22 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:353847 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 138:356235  
 TITLE: Safe nonaqueous electrolyte  
 secondary batteries  
 INVENTOR(S): Takeuchi, Takashi; Watanabe, Shoichiro; Matsuo,  
 Akira  
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003132892	A	20030509	JP 2001-327348	20011025
			<--	
PRIORITY APPLN. INFO.:			JP 2001-327348	20011025
			<--	

ED Entered STN: 09 May 2003



- AB The batteries include electrode plates containing phosphorized cellulose compds., as binders. Overshooting at high temperature is prevented.
- IT 10124-31-9DP, Ammonium phosphate, reaction products with CM-cellulose  
(binder; safe and reliable nonaq. electrolyte secondary batteries containing phosphorized cellulose derivs. as binders in electrode plates)
- RN 10124-31-9 HCAPLUS
- CN Phosphoric acid, ammonium salt (1:?) (CA INDEX NAME)



●x NH<sub>3</sub>

- IT 10124-31-9D, Ammonium phosphate, reaction products with cellulose (derivs.)  
(safe and reliable nonaq. electrolyte secondary batteries containing phosphorized cellulose derivs. as binders in electrode plates)
- RN 10124-31-9 HCAPLUS
- CN Phosphoric acid, ammonium salt (1:?) (CA INDEX NAME)



●x NH<sub>3</sub>

- IC ICM H01M004-62  
ICS H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST safety overshooting prevention; phosphorized cellulose binder nonaq secondary battery
- IT Battery electrodes  
Secondary batteries  
(safe and reliable nonaq. electrolyte secondary batteries containing phosphorized cellulose derivs. as binders in electrode plates)
- IT 2466-09-3D, Pyrophosphoric acid, reaction products with cellulose (derivs.) 7664-38-2D, Phosphoric acid, reaction products with cellulose (derivs.) 9004-32-4D, Carboxymethylcellulose, phosphorized 9004-57-3D, Ethyl cellulose, phosphorized 9004-62-0D, Hydroxyethylcellulose, phosphorized 9004-67-5D, Methyl cellulose, phosphorized 37353-59-6D, Hydroxymethyl cellulose, phosphorized

(binder; safe and reliable nonaq. electrolyte secondary batteries containing phosphorized cellulose derivs. as binders in electrode plates)

IT 9000-11-7DP, CM-cellulose, reaction products with ammonium phosphate  
10124-31-9DP, Ammonium phosphate, reaction products with  
CM-cellulose  
(binder; safe and reliable nonaq. electrolyte secondary batteries containing phosphorized cellulose derivs. as binders in electrode plates)

IT 10124-31-9D, Ammonium phosphate, reaction products with  
cellulose (derivs.)  
(safe and reliable nonaq. electrolyte secondary batteries containing phosphorized cellulose derivs. as binders in electrode plates)

L66 ANSWER 23 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:42602 HCAPLUS Full-text

DOCUMENT NUMBER: 138:109586

TITLE: Nonaqueous electrolyte  
battery, electrode stabilizing agent, phosphazene derivative, and manufacture of the derivative

INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao;  
Horikawa, Yasuo

PATENT ASSIGNEE(S): Bridgestone Corporation, Japan

SOURCE: PCT Int. Appl., 79 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003005479	A1	20030116	WO 2002-JP6571	20020628
<p>W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW</p> <p>RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG</p>				
CA 2451791	A1	20030116	CA 2002-2451791	20020628
AU 2002313297	A1	20030121	AU 2002-313297	20020628
EP 1414097	A1	20040428	EP 2002-738861	20020628
<p>R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR</p>				
CN 1524313	A	20040825	CN 2002-813411	20020628
US 20040191635	A1	20040930	US 2004-482810	20040105
PRIORITY APPLN. INFO.:				
			JP 2001-204415	A 20010705
			JP 2001-207705	A 20010709

<--  
 JP 2001-207706 A 20010709  
 <--  
 JP 2001-242051 A 20010809  
 <--  
 JP 2001-242067 A 20010809  
 <--  
 WO 2002-JP6571 W 20020628  
 <--

OTHER SOURCE(S): MARPAT 138:109586  
 ED Entered STN: 17 Jan 2003  
 GI

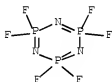


AB The battery has a cathode, a Li intercalating anode, and a nonaq. electrolyte solution containing a supporting electrolyte and a phosphazene derivative, preferably, I (R1-3 = halogen or monovalent substituent, X1 = C, Si, Ge, Sn, N, P, As, Sb, Bi, O, S, Se, Te, Po or a group containing  $\geq 1$  of the above elements, Y1-3 = bivalent connection group, bivalent element, or a single bond) or II (R4 = halogen or monovalent substituent, n = 3-14). The electrode stabilizing agent is a phosphazene derivative containing groups having multiple bond besides the the multiple bond between N and P. The phosphazene derivs. are prepared by reacting III with alkali metal alkoxide or phenoxide.

IT 15599-91-4D, reaction products with sodium alcoholates  
 33027-67-7 471894-05-0  
 (nonaq. electrolyte solns. containing phosphazene  
 derivs. for secondary lithium batteries)

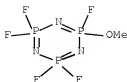
RN 15599-91-4 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexafluoro-2,2,4,4,6,6-hexahydro- (CA INDEX NAME)

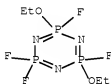


RN 33027-67-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
 2,2,4,4,6-pentafluoro-6-methoxy- (CA INDEX NAME)



RN 471894-05-0 HCAPLUS  
 CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,  
 2,4-diethoxy-2,4,6,6-tetrafluoro- (CA INDEX NAME)



IC ICM H01M010-40  
 ICS C07F009-6581  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST battery electrode stabilizer unsatd phosphazene deriv;  
 electrolyte phosphazene deriv secondary lithium battery  
 IT Battery electrodes  
 (nonaq. electrolyte solns. containing electrode  
 stabilizing phosphazene derivs. for secondary lithium batteries)  
 IT Battery electrolytes  
 (nonaq. electrolyte solns. containing phosphazene  
 derivs. for secondary lithium batteries)  
 IT Phosphazenes  
 (nonaq. electrolyte solns. containing phosphazene  
 derivs. for secondary lithium batteries)  
 IT 52627-24-4, Cobalt lithium oxide  
 (nonaq. electrolyte solns. containing electrode  
 stabilizing phosphazene derivs. for secondary lithium batteries)  
 IT 64-17-5D, Ethanol, reaction products with  
 hexafluorocyclotriphosphazatriene 96-49-1, Ethylene carbonate  
 105-58-8, Diethyl carbonate 124-41-4D, Sodium methoxide, reaction  
 products with hexafluorocyclotriphosphazatriene 141-52-6D, Sodium  
 ethoxide, reaction products with hexafluorocyclotriphosphazatriene  
 15599-91-4D, reaction products with sodium alcoholates  
 21324-40-3, Lithium hexafluorophosphate 23027-67-7  
 471894-05-0  
 (nonaq. electrolyte solns. containing phosphazene  
 derivs. for secondary lithium batteries)  
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 24 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:11685 HCAPLUS Full-text

DOCUMENT NUMBER: 139:106588  
 TITLE: Strong versus weak chiral cation exchangers: comparative evaluation for enantiomer separation of chiral bases by non-aqueous CEC  
 AUTHOR(S): Zarbl, Elfriede; Lammerhofer, Michael; Woschek, Anna; Hammerschmidt, Friedrich; Parenti, Carlo; Cannazza, Giuseppe; Lindner, Wolfgang  
 CORPORATE SOURCE: Christian Doppler Laboratory for Molecular Recognition Materials, Institute of Analytical Chemistry, University of Vienna, Vienna, A-1090, Austria  
 SOURCE: Journal of Separation Science (2002), 25(15-17), 1269-1283  
 CODEN: JSSCCJ; ISSN: 1615-9306  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

ED Entered STN: 07 Jan 2003

AB Novel enantioselective silica-supported strong and weak cation exchange (SCX and WCX) materials (3.5  $\mu$ m particles) based on enantiomerically pure N-(4-allyloxy-3,5-dichlorobenzoyl)-2-amino-3,3-dimethylbutanesulfonic acid and corresponding phosphonic acid as well as carboxylic acid structural analogs as chiral selectors have been evaluated for enantiomer separation of chiral bases by non-aqueous capillary electrochromatog. (CEC). Capillary columns packed with these chiral stationary phases (CSPs) showed enantioselectivity in non-aqueous CEC towards a variety of chiral bases including amino alcs. such as  $\beta$ -sympathomimetics and  $\beta$ -blockers. Chromatog. and electrokinetic properties of the strong and weak chiral cation exchangers were evaluated comparatively in terms of their pH\* profile, i.e. in terms of their dependence on the base-to-acid ratio of the background electrolyte. It turned out that the SCX type CSPs, and in particular the one based on the  $\beta$ -amino sulfonic acid show a broader window of applicable and suitable exptl. conditions for CEC. For example, a strong and constant EOF was obtained on the sulfonic acid based CSP over the entire pH\* range studied, while the EOF velocity of the carboxylic acid based CSP was slow under acidic conditions. In the separation of chiral bases, the ion-exchange retention mechanism dominated over electrophoretic migration under most conditions, especially on the SCX type CSPs. The SCX phases exhibited reasonable enantioselectivity over a wider pH\* range, while the weak chiral cation exchanger (WCX type CSP) showed enantiomer separation capabilities for primary, secondary, and tertiary chiral amines only in the alkaline pH\* range. Sulfonic and phosphonic acid based CSPs possess broad spectrum of applicability. For example, clenbuterol enantiomers were well baseline resolved both on sulfonic acid based CSP ( $\alpha$  = 1.33, Rs = 14.2) as well as phosphonic acid based CSP ( $\alpha$  = 1.13, Rs = 4.9). In contrast, under the same conditions the corresponding carboxylic acid CSP exhibited enantioselectivity  $\alpha$  of 1.08 and resolution Rs of 1.3 only.

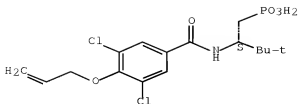
IT 557787-77-6P

(resolution of  $\beta$ -blockers and  $\beta$ -sympathomimetics by capillary electrochromatog. using  $\beta$ -amino-sulfonic, -phosphonic and -carboxylic acids as cation exchange selectors)

RN 557787-77-6 HCAPLUS

CN Phosphonic acid, [(2S)-2-[[3,5-dichloro-4-(2-propenyloxy)benzoyl]amino]-3,3-dimethylbutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

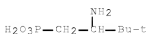


IT 57264-36-2P

(separation and resolution of basic drugs by capillary  
electrochromatog. using  $\beta$ -amino-sulfonic, -phosphonic and  
-carboxylic acids as cation exchange selectors)

RN 67264-36-2 HCAPLUS

CN Phosphonic acid, (2-amino-3,3-dimethylbutyl)- (9CI) (CA INDEX NAME)



CC 64-3 (Pharmaceutical Analysis)

IT Cation exchangers

Chromatographic stationary phases

Pharmaceutical analysis

Resolution (separation)

Solvent effect

 $\beta$ -Adrenoceptor agonists $\beta$ -Adrenoceptor antagonists

(resolution of  $\beta$ -blockers and  $\beta$ -sympathomimetics by  
capillary electrochromatog. using  $\beta$ -amino-sulfonic,  
-phosphonic and -carboxylic acids as cation exchange selectors)

IT 557787-76-5P 557787-77-6P

(resolution of  $\beta$ -blockers and  $\beta$ -sympathomimetics by  
capillary electrochromatog. using  $\beta$ -amino-sulfonic,  
-phosphonic and -carboxylic acids as cation exchange selectors)

IT 54-80-8, Pronethalol 56-54-2, Quinidine 68-88-2, Hydroxyzine  
90-81-3, (+)-Ephedrine 125-53-1, Oxyphenycyclimine 130-95-0,  
Quinine 134-49-6, Phenmetrazine 299-42-3, (-)-Ephedrine  
321-98-2, (+)-Ephedrine 325-17-7, S-Pronethalol 395-28-8,  
Isoxsuprine 492-41-1, (-)-Norephedrine 525-66-6, Propranolol  
536-21-0, Norfenefrine 572-59-8 586-06-1, Orciprenaline  
1420-80-0, (-)-Norfenefrine 2043-38-1, Butizide 2282-54-4,  
(-)-Metanephine 3625-06-7, Mebeverine 3703-79-5, Bamethane  
3737-09-5, Disopyramide 3886-70-2, (R)-1-(1-Naphthyl)ethylamine  
3930-20-9, Sotalol 4199-09-1, S-Propranolol 5001-33-2,  
Metanephine 5051-22-9 5302-35-2, (-)-Nifenalol 5302-36-3  
5596-07-6, (+)-Norfenefrine 5696-91-3, (-)-Pronethalol 6452-71-7,  
Oxprenolol 6673-35-4, Practolol 6720-02-1, DL-Tryptophanamide  
6740-88-1, Ketamine 7413-36-7, Nifenalol 10402-90-1, Eprazinone  
10420-89-0, (S)-1-(1-Naphthyl)ethylamine 10476-53-6,  
4-Hydroxypropranolol 13523-86-9, Pindolol 13655-52-2, Alprenolol  
14051-33-3, Benzetimide 14556-46-8, Bupranolol 14838-15-4,  
Norephedrine 15676-16-1, Sulpiride 18507-09-0 18559-94-9,

Salbutamol 20696-57-5, L-Tryptophanamide 21888-98-2,  
 (+)-Benzetimide 21888-99-3, (-)-Benzetimide 22664-55-7,  
 Metipranolol 22916-47-8, Miconazole 22972-96-9, (S)-Oxprenolol  
 23031-25-6, Terbutaline 23672-07-3, (S)-Sulpiride 23694-81-7,  
 Mepindolol 23756-79-8, (R)-Sulpiride 23846-71-1, S-Alprenolol  
 23846-72-2 26328-11-0, (S)-Pindolol 26328-12-1, (-)-Mepindolol  
 27203-92-5, Tramadol 27220-47-9, Econazole 27523-40-6, Isoconazole  
 29121-57-1 29122-68-7, Atenolol 30236-31-8, (-)-Sotalol  
 30236-32-9, S-Sotalol 31576-00-8, (R)-Oxprenolol 32953-89-2,  
 Rimfeterol 33643-46-8, (S)-Ketamine 33643-49-1, (R)-Ketamine  
 34271-50-6, S-Salbutamol 34391-04-3, (-)-Salbutamol 34915-68-9,  
 Bunitrolol 36507-48-9, (+)-Penbutolol 36637-18-0, Etidocaine  
 37148-27-9, Clenbuterol 37394-31-3, (-)-Terbutaline 37517-30-9,  
 Acebutolol 37577-28-9, (+)-Norephedrine 37936-65-5, S-Practolol  
 37936-66-6, (+)-Practolol 38104-34-6, S-Bupranolol 38188-41-9,  
 (-)-Etidocaine 38188-42-0, (+)-Etidocaine 38236-46-3,  
 N-Deisopropyl-disopyramide 38363-40-5, S-Penbutolol 38363-41-6,  
 (+)-Penbutolol 38689-24-6, D-Tryptophanamide 42151-59-7,  
 (+)-Quinine 42882-31-5, 1-(1-Naphthyl)ethylamine 46905-83-3,  
 (-)-Bunitrolol 47208-80-0 47416-60-4, (S)-Oxyphenacycline  
 47447-52-9, (S)-Miconazole 47447-53-0, (R)-Miconazole 50306-03-1,  
 (-)-Clenbuterol 50499-60-0, S-Clenbuterol 50679-08-8, Terfenadine  
 51384-51-1, Metoprolol 51688-68-7, (-)-Mefloquine 51742-87-1,  
 (+)-Mefloquine 52365-63-6, Dipivefrine 52849-56-6,  
 (+)-Metipranolol 52849-58-8, (-)-Metipranolol 53230-10-7,  
 Mefloquine 54063-53-5, Propafenone 54143-55-4, Flecainide  
 56298-24-9 56715-13-0 56980-93-9, Celiprolol 57460-41-0,  
 Talinolol 57919-12-7, (+)-Phenmetrazine 59995-59-4, S-Bunitrolol  
 61877-83-6, (+)-Bupranolol 68107-81-3 68107-82-4 68374-35-6,  
 (R)-Pindolol 71369-59-0, (-)-Talinolol 71369-60-3, (+)-Talinolol  
 73094-37-8, (+)-Econazole 73094-39-0, (-)-Econazole 73590-58-6,  
 Omeprazole 74464-83-8, (-)-Disopyramide 74464-84-9, S-Disopyramide  
 76792-97-7, (R)-4-Hydroxypropenolol 77494-40-7 77494-41-8  
 79619-31-1, Flavodilol 81024-42-2, S-Metoprolol 81024-43-3  
 90877-48-8, S-Terbutaline 91878-52-3, (+)-Celiprolol 92007-66-4,  
 (R)-Mepindolol 93379-54-5, S-Atenolol 95586-73-5, S-Celiprolol  
 95586-74-6 95586-75-7 96782-77-3 96783-07-2 99396-41-5,  
 R-Orciprenaline 99495-90-6, (-)-Flecainide 99495-92-8,  
 S-Flecainide 102625-70-7, Pantoprazole 105870-52-8 107381-31-7,  
 (R)-Propafenone 107381-32-8, (S)-Propafenone 109632-10-2  
 111051-31-1 111051-32-2 111051-33-3 111051-34-4 114747-00-1,  
 (R)-Oxyphenacycline 119141-88-7, (S)-Omeprazole 119141-89-8,  
 (R)-Omeprazole 120330-87-2, (S)-Flavodilol 120408-22-2,  
 (R)-Flavodilol 126588-96-3, (S)-Terfenadine 126830-75-9,  
 (R)-Terfenadine 142678-35-1, (S)-Pantoprazole 142706-18-1  
 148229-78-1, (+)-Tramadol 148229-79-2, (-)-Tramadol 149494-91-7  
 155418-87-4, S-Orciprenaline 189298-45-1, (S)-Hydroxyzine  
 189298-46-2, (R)-Hydroxyzine 190773-00-3, O-(tert-  
 Butylcarbamoyl)quinine 200944-08-7, O-(tert-Butylcarbamoyl)quinidine  
 322764-96-5 322764-97-6 378186-11-9 378186-12-0 378186-13-1  
 437999-44-5 437999-45-6 497180-74-2, (-)-Phenmetrazine  
 557787-80-1 557787-81-2 557787-82-3 557787-83-4 557787-84-5  
 557787-85-6 557787-86-7 557787-87-8 558432-30-7 558432-31-8

(separation and resolution of basic drugs by capillary  
 electrochromatog. using  $\beta$ -amino-sulfonic, -phosphonic and  
 -carboxylic acids as cation exchange selectors)

IT 64-18-6, Formic acid, analysis 96-20-8  
 (separation and resolution of basic drugs by capillary  
 electrochromatog. using  $\beta$ -amino-sulfonic, -phosphonic and  
 -carboxylic acids as cation exchange selectors)

IT 67264-36-2P 105786-04-7P 557787-78-7P  
 (separation and resolution of basic drugs by capillary  
 electrochromatog. using  $\beta$ -amino-sulfonic, -phosphonic and  
 -carboxylic acids as cation exchange selectors)  
 IT 181716-10-9 204191-43-5 557787-79-8  
 (separation and resolution of basic drugs by capillary  
 electrochromatog. using  $\beta$ -amino-sulfonic, -phosphonic and  
 -carboxylic acids as cation exchange selectors)  
 REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 25 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:754338 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:281869  
 TITLE: Ionic liquid, electrolyte salt and  
 electrolyte solution for power storing  
 device, double layer capacitor, and secondary  
 battery  
 INVENTOR(S): Sato, Takaya; Masuda, Gen; Nodu, Ryutaro; Maruo,  
 Tatsuya  
 PATENT ASSIGNEE(S): Nisshinbo Industries, Inc., Japan  
 SOURCE: PCT Int. Appl., '72 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002076924	A1	20021003	WO 2002-JP2845	20020325
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2441981	A1	20021003	CA 2002-2441981	20020325
<--				
AU 2002239059	A1	20021008	AU 2002-239059	20020325
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EP 1380569	A1	20040114	EP 2002-705479	20020325
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1503778	A	20040609	CN 2002-808669	20020325
<--				
TW 591677	B	20040611	TW 2002-91105879	20020326
<--				
US 20040094741	A1	20040520	US 2003-472823	20030925
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US 7297289	B2	20071120		
US 20070031729	A1	20070208	US 2006-537269	20060929
<--				



10/540,837

JP 2007161733	A	20070628	JP 2007-61163	20070312
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JP 2007227940	A	20070906	JP 2007-61158	20070312
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KR 2008010467	A	20080130	KR 2007-730899	20071228
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KR 2008010468	A	20080130	KR 2007-730900	20071228
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KR 823972	B1	20080422		
PRIORITY APPLN. INFO.:			JP 2001-87221	A 20010326
			<--	
			JP 2001-272834	A 20010910
			<--	
			JP 2002-576187	A3 20020325
			<--	
			WO 2002-JP2845	W 20020325
			<--	
			US 2003-472823	A3 20030925
			<--	
			KR 2003-712571	A3 20030926
			<--	

OTHER SOURCE(S): MARPAT 137:281869

ED Entered SIN: 04 Oct 2002

AB The liquid is an onium salt R1R2R3R4X+.Y [R1-4 = C1-5 alkyl or RO(CH2)n, R = Me or Et, n = 1-4 integer, any 2 of R1-4 may join together to form a ring, ≥1 of R1-4 is RO(CH2)n, X = N or P, Y = monovalent anion] m. ≤50°. The electrolyte solution contains the ionic liquid as electrolyte salt dissolved in a nonaq. organic solvent. The electrolyte solution may also contain a Li salt. The power storing device is a double layer capacitor or a secondary battery using the electrolyte solution

IT 464927-81-9  
(electrolyte solns. containing liquid ionic compds. for secondary batteries and double layer capacitors)

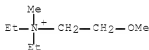
RN 464927-81-9 HCAPLUS

CN Ethanaminium, N,N-diethyl-2-methoxy-N-methyl-, hexafluorophosphate(1-)  
(1:1) (CA INDEX NAME)

CM 1

CRN 464927-71-7

CMF C8 H20 N O



CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IC ICM C07C217-08  
 ICS C07F009-08; C07F009-54; H01G009-038; C07D295-08; H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 76  
 ST double layer capacitor electrolyte liq onium salt; secondary battery electrolyte liq onium salt  
 IT Capacitors  
 (double layer; electrolyte solns. containing liquid ionic compds. for double layer capacitors)  
 IT Battery electrolytes  
 (electrolyte solns. containing liquid ionic compds. for secondary lithium batteries)  
 IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 14283-07-9, Lithium fluoroborate 90076-65-6 464927-72-8 464927-74-0 464927-76-2 464927-78-4 464927-80-8 464927-81-9 464927-82-0 464927-83-1 464927-84-2  
 (electrolyte solns. containing liquid ionic compds. for secondary batteries and double layer capacitors)  
 REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 26 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:730400 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:250304  
 TITLE: Flame-retardant additive for lithium ion batteries  
 INVENTOR(S): Prakash, Jai; Lee, Chang Woo; Amine, Khalil  
 PATENT ASSIGNEE(S): Illinois Institute of Technology, USA  
 SOURCE: U.S., 8 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

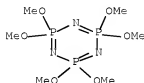
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6455200	B1	20020924	US 2000-645381	20000824

PRIORITY APPLN. INFO.: US 1999-152071P P 19990902  
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ED Entered STN: 26 Sep 2002

AB A lithium-ion battery has an anode, a cathode and a nonaq. solvent lithium electrolyte. At least one cyclophosphazene is added to the nonaq. solvent lithium electrolyte, which cyclophosphazene acts as a flame-retardant material. The nonaq. solvent lithium electrolyte is preferably a carbonate-based electrolyte and the preferred cyclophosphazene is hexamethoxycyclotriphosphazene.

IT 957-13-1, Hexamethoxycyclotriphosphazene  
 (flame-retardant additive for lithium ion batteries)  
 RN 957-13-1 HCAPLUS  
 CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine  
 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexamethoxy- (CA INDEX  
 NAME)

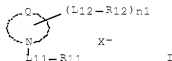


IC ICM H01M004-58  
 ICS H01M006-16  
 INCL 429231950  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)  
 ST lithium battery electrolyte additive cyclophosphazene flame  
 retardant  
 IT Battery electrolytes  
 Fire-resistant materials  
 (flame-retardant additive for lithium ion batteries)  
 IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate  
 (electrolyte; flame-retardant additive for lithium ion  
 batteries)  
 IT 957-13-1, Hexamethoxycyclotriphosphazene  
 (flame-retardant additive for lithium ion batteries)  
 REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 27 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:553509 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:127526  
 TITLE: Electrolyte composition with high ion  
 conductivity and high ion transport number and  
 noneaqueous electrolyte secondary  
 batteries  
 INVENTOR(S): Wariishi, Koji; Sen, Masakazu; Ono, Michio  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002208433	A	20020726	JP 2001-325587	20011023
<--				
PRIORITY APPLN. INFO.:			JP 2000-323202	A 20001023
<--				

OTHER SOURCE(S): MARPAT 137:127526  
 ED Entered STN: 26 Jul 2002  
 GI



AB The compns. contain (A)  $\geq 1$  compds. selected from I, R21L21A+(L22R22)(L23R23)(L24R24) X- and R31L31N+(L32R32):C[N(L33R33)(L34R34)][N(L35R35)(L36R36)] X- (Q = group for forming 5- or 6-membered aromatic cation; L11-12, L21-24, L31-36 = (un)substituted alkylene(oxy) and/or alkenylene(oxy); R11-12, R21-24, R31-36 = H, OM(OR)n, may form ring;  $\geq 1$  of R11-12, R21-24, R31-36 = OM(OR)n; R = (un)substituted alkyl or aryl; M = Si, B, Ti, Al, Ge, Sn; n1 = 0, natural number; X- = anion) and (B) salts of Group IA or IIA ions. Preferable Markush structures for I are further specified. Also claimed are solid electrolyte compns. containing crosslinked compds. of component A, obtained by reaction of A with compds. having  $\geq 2$  nucleophilic groups in a mol., instead of component A. Nonaq. electrolyte secondary batteries with the said electrolyte compns. are also claimed. Batteries with high capacity and excellent cycle characteristics are obtained.

IT 444046-05-3  
 (ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)

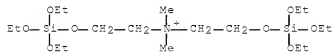
RN 444046-05-3 HCAPLUS

CN Ethanaminium, N,N-dimethyl-2-[(triethoxysilyl)oxy]-N-[2-[(triethoxysilyl)oxy]ethyl]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 444045-85-6

CMF C18 H44 N O8 Si2



CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



- IC ICM H01M010-40  
ICS H01M010-40; C09K003-16; H01B001-06
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 76
- ST nonaq electrolyte compn secondary battery;  
imidazolinium salt nonaq electrolyte secondary battery; quaternary ammonium nonaq electrolyte secondary battery; polyoxyalkylene ionene polymer solid electrolyte battery
- IT Battery electrolytes  
Polymer electrolytes  
Solid state secondary batteries  
(ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT Polyoxyalkylenes, uses  
(ionene-, lithium complex; ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT Secondary batteries  
(nonaq. electrolyte; ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT Ionene polymers  
(polyoxyalkylene-, lithium complex; ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT 7439-93-2DP, Lithium, polyoxyalkylene-ionene polymer complexes  
444045-88-9P 444045-89-0P 444045-91-4P 444046-10-0DP, lithium complex 444046-11-1DP, lithium complex 444046-12-2DP, lithium complex 444046-14-4DP, lithium complex 444046-15-5DP, lithium complex 444046-16-6DP, lithium complex 444046-17-7DP, lithium complex 444046-18-8DP, lithium complex 444046-19-9DP, lithium complex 444046-20-2DP, lithium complex 444046-21-3DP, lithium complex  
(ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT 90076-65-6  
(ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT 444045-96-9 444045-97-0 444045-98-1 444045-99-2 444046-01-9 444046-02-0 444046-03-1 444046-04-2 444046-05-3 444046-07-5 444046-09-7  
(ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)
- IT 444045-79-8P 444045-80-1P 444045-81-2P 444045-82-3P 444045-83-4P 444045-84-5P  
(ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)

IT 444045-86-7P  
 (ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)

IT 74-88-4, Methyl iodide, reactions 105-59-9, N-Methyldiethanolamine 624-76-0, Iodoethanol 998-30-1, Triethoxysilane 1615-14-1, 1H-Imidazole-1-ethanol 7783-93-9, Silver perchlorate 13439-84-4, Pentamethylguanidine 14104-20-2, Silver tetrafluoroborate (ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)

IT 7791-03-9, Lithium perchlorate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 444045-93-6 444045-95-8 (ammonium compound-Li salt mixts. or their crosslinked solids as electrolytes for nonaq. secondary batteries)

L66 ANSWER 28 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:540171 HCAPLUS Full-text

DOCUMENT NUMBER: 137:111687

TITLE: Electrode-active materials for primary or secondary lithium batteries containing unsaturated phosphate ester additives

INVENTOR(S): Gan, Hong; Takeuchi, Esther S.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020094479	A1	20020718	US 2001-761626	20010117
			<--	
US 6511772	B2	20030128		
PRIORITY APPLN. INFO.:			US 2001-761626	20010117
			<--	

OTHER SOURCE(S): MARPAT 137:111687

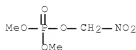
ED Entered STN: 19 Jul 2002

AB Electrode-active materials for primary or secondary lithium batteries are fabricated in a method that includes mixing the active electrode material with an unsatd. phosphate ester prior to contact of the active material with its current collector. The resulting electrode couple is activated by a non-aqueous electrolyte (especially containing Li salts) which dissolves the phosphate ester. The unsatd. phosphate ester has the general structure (R1)P(:O)(OR2)(OR3), in which at least one of the R groups is H (but not all 3) and at least one of the R groups is a C23-unsatd. group. Suitable phosphate esters include monobenzyl phosphate, benzyl phosphate, benzyl di-Me phosphate, allyl di-Me phosphate, cyanomethyl di-Me phosphate, etc.

IT 433979-69-2, Phosphoric acid, dimethyl nitromethyl ester  
 433979-71-6, Phosphoric acid, cyanomethyl dimethyl ester  
 433979-72-7, Phosphoric acid, bis(cyanomethyl) methyl ester  
 (nonaq. battery electrolyte containing;  
 electrode-active materials for primary or secondary lithium  
 batteries containing unsatd. phosphate ester additives)

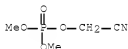
RN 433979-69-2 HCAPLUS

CN Phosphoric acid, dimethyl nitromethyl ester (CA INDEX NAME)



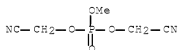
RN 433979-71-6 HCAPLUS

CN Phosphoric acid, cyanomethyl dimethyl ester (CA INDEX NAME)



RN 433979-72-7 HCAPLUS

CN Phosphoric acid, bis(cyanomethyl) methyl ester (CA INDEX NAME)



IC ICM H01M004-62

ICS H01M010-40; H01M004-54

INCL 429212000; X42-923.2; X42-921.7; X42-934.2; X42-934.1; X42-933.0; X42-933.2; X42-921.9; X42-923.15; X42-9 5.2

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST battery electrode unsatd phosphate ester additive; cathode anode  
battery unsatd phosphate ester additive; electrolyte  
nonaq lithium battery phosphate ester additive

IT Lactams

Lactones

(nonaq. battery electrolytes containing;  
electrode-active materials for primary or secondary lithium  
batteries containing unsatd. phosphate ester additives)

IT Battery electrolytes

(nonaq.; electrode-active materials for primary or  
secondary lithium batteries containing unsatd. phosphate ester  
additives)IT 1623-07-0, Benzyl phosphate 1623-10-5, Diallyl methyl phosphate  
1623-19-4, Triallyl phosphate 1707-92-2, Tribenzyl phosphate  
1779-34-6, Tripropargyl phosphate 7664-38-2D, Phosphoric acid,  
unsatd. esters 7748-09-6, Diallyl phosphate 55343-62-9, Propargyl  
phosphate 56379-74-9, Phosphoric acid, dimethyl 2-propynyl ester  
67293-73-6, Phosphoric acid, dimethyl phenylmethyl ester  
142804-89-5, Phosphoric acid, phenylmethyl ester 433979-69-2  
, Phosphoric acid, dimethyl nitromethyl ester 433979-70-5,  
2-Propyn-1-ol, hydrogen phosphate 433979-71-6, Phosphoric

acid, cyanomethyl dimethyl ester 433979-72-7, Phosphoric acid, bis(cyanomethyl) methyl ester (nonaq. battery electrolyte containing; electrode-active materials for primary or secondary lithium batteries containing unsatd. phosphate ester additives)

IT 67-68-5, Dimethyl sulfoxide, uses 68-12-2, Dimethyl formamide, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-20-3, Diisopropyl ether 108-29-2,  $\gamma$ -Valerolactone 108-32-7, Propylene carbonate 109-99-9, Tetrahydrofuran, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 463-79-6D, Carbonic acid, dialkyl esters 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 872-50-4, uses 2923-17-3, Lithium trifluoroacetate 2923-20-8, Ethanesulfonic acid, pentafluoro-, lithium salt 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy-2-methoxyethane 7790-69-4, Lithium nitrate 7791-03-9, Lithium perchlorate 13453-75-3, Lithium fluorosulfonate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 30215-10-2, Lithium benzenesulfonate 33454-82-9, Lithium trifluoromethanesulfonate 35363-40-7, Ethyl propyl carbonate, uses 56525-42-9, Methyl propyl carbonate, uses 90076-65-6, Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt 132404-42-3, Methane, tris[(trifluoromethyl)sulfonyl]-, ion(1-), lithium (nonaq. battery electrolytes containing; electrode-active materials for primary or secondary lithium batteries containing unsatd. phosphate ester additives)

L66 ANSWER 29 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:

2002:518137 HCAPLUS Full-text

DOCUMENT NUMBER:

137:96241

TITLE:

Powdery cathode active mass including olivine structure and secondary nonaqueous electrolyte lithium battery using it

INVENTOR(S):

Nakamura, Masaya; Saito, Hirohiko

PATENT ASSIGNEE(S):

Denso Co., Ltd., Japan

SOURCE:

Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002198050	A	20020712	JP 2000-397537	20001227
			<--	
PRIORITY APPLN. INFO.:			JP 2000-397537	20001227
			<--	

ED Entered STN: 12 Jul 2002

AB The cathode active mass contains phosphoric acid compds. with olivine structure represented by  $\text{Li}_1\text{-xAxFe}_1\text{-y-zMyMezP}_1\text{-mXmO}_4\text{-nZn}$  (A = Na and/or K; M is  $\geq 1$  of metals excluding Fe, Li, and Al; Me = Li and/or Al; X = Si, N, As,



and/or S; Z = F, Cl, Br, I, S, and/or N; x = 0-0.1; y = 0-0.5; z = 0-0.3; y + z = 0-0.5; m = 0-0.3; n = 0-0.5; x + z + m + n > 0) in the whole or part of the surfaces of the active mass particles. The battery using the active mass has high charge/discharge efficiency in large current.

IT 441769-74-0 441769-76-2

(powdery cathode active mass including phosphoric acid compound with olivine structure for nonaq. electrolyte Li battery)

RN 441769-74-0 HCAPLUS

CN Cobalt iron lithium metaphosphate nitrate oxide  
(Co<sub>0.2</sub>Fe<sub>0.8</sub>Li(PO<sub>3</sub>)(NO<sub>3</sub>)<sub>0.100.6</sub>) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.6	17778-80-2
O3P	1	15389-19-2
NO3	0.1	14797-55-8
Co	0.2	7440-48-4
Li	1	7439-93-2
Fe	0.8	7439-89-6

RN 441769-76-2 HCAPLUS

CN Cobalt iron lithium nitrate oxide phosphate  
(Co<sub>0.2</sub>Fe<sub>0.8</sub>Li(NO<sub>3</sub>)<sub>0.100.1</sub>(PO<sub>4</sub>)<sub>0.9</sub>) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.1	17778-80-2
NO3	0.1	14797-55-8
O4P	0.9	14265-44-2
Co	0.2	7440-48-4
Li	1	7439-93-2
Fe	0.8	7439-89-6

IC ICM H01M004-58

ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery cathodes

(powdery cathode active mass including phosphoric acid compound with olivine structure for nonaq. electrolyte Li battery)

IT 441769-67-1, Cobalt iron lithium phosphate (Co<sub>0.2</sub>Fe<sub>0.7</sub>Li<sub>1.1</sub>(PO<sub>4</sub>))  
441769-68-2, Aluminum cobalt iron lithium phosphate  
(Al<sub>0.1</sub>Co<sub>0.2</sub>Fe<sub>0.7</sub>Li(PO<sub>4</sub>)) 441769-69-3 441769-70-6 441769-71-7  
441769-72-8 441769-73-9 441769-74-0 441769-75-1, Cobalt  
iron lithium phosphate silicate (Co<sub>0.2</sub>Fe<sub>0.8</sub>Li(PO<sub>4</sub>)<sub>0.9</sub>(SiO<sub>4</sub>)<sub>0.1</sub>)  
441769-76-2 441769-77-3, Cobalt iron lithium arsenate  
phosphate (Co<sub>0.2</sub>Fe<sub>0.8</sub>Li(AsO<sub>4</sub>)<sub>0.1</sub>(PO<sub>4</sub>)<sub>0.9</sub>) 441769-78-4, Cobalt iron  
lithium phosphate sulfate (Co<sub>0.2</sub>Fe<sub>0.8</sub>Li(PO<sub>4</sub>)<sub>0.9</sub>(SO<sub>4</sub>)<sub>0.1</sub>)  
441769-79-5, Cobalt iron lithium sodium phosphate  
(Co<sub>0.2</sub>Fe<sub>0.8</sub>Li<sub>0.95</sub>Na<sub>0.05</sub>(PO<sub>4</sub>)) 441769-80-8, Cobalt iron lithium  
potassium phosphate (Co<sub>0.2</sub>Fe<sub>0.8</sub>Li<sub>0.95</sub>K<sub>0.05</sub>(PO<sub>4</sub>))  
(powdery cathode active mass including phosphoric acid compound with  
olivine structure for nonaq. electrolyte Li battery)

ACCESSION NUMBER: 2002:446206 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:22369  
 TITLE: Phosphate additives for nonaqueous  
 electrolyte rechargeable lithium batteries  
 INVENTOR(S): Gan, Hong; Takeuchi, Esther S.  
 PATENT ASSIGNEE(S): Wilson Greatbatch Ltd., USA  
 SOURCE: Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1213782	A2	20020612	EP 2001-306744	20010807
EP 1213782	A3	20031112	<--	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CA 2353751	A1	20020527	CA 2001-2353751	20010725
			<--	
JP 2002198092	A	20020712	JP 2001-360493	20011127
			<--	
PRIORITY APPLN. INFO.:			US 2000-723059	A 20001127
			<--	

OTHER SOURCE(S): MARPAT 137:22369

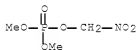
ED Entered STN: 13 Jun 2002

AB A lithium ion electrochem. cell having high charge/discharge capacity, long cycle life and exhibiting a reduced first cycle irreversible capacity, is disclosed. The stated benefits are realized by the addition of at least one phosphate additive having the formula: (R1O)P(=O)(OR2)(OR3) and wherein R1, R2 and R3 are the same or different, wherein at least one, but not all three, of the R groups is hydrogen, or at least one of the R groups has at least 3 carbon atoms and contains an sp or sp2 hybridized carbon atom bonded to an sp3 hybridized carbon atom bonded to the oxygen atom bonded to the phosphorous atom.

IT 433979-69-2 433979-71-6 433979-72-7  
 (phosphate additives for nonaq. electrolyte  
 rechargeable lithium batteries)

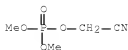
RN 433979-69-2 HCAPLUS

CN Phosphoric acid, dimethyl nitromethyl ester (CA INDEX NAME)

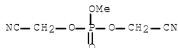


RN 433979-71-6 HCAPLUS

CN Phosphoric acid, cyanomethyl dimethyl ester (CA INDEX NAME)



RN 433979-72-7 HCAPLUS  
 CN Phosphoric acid, bis(cyanomethyl) methyl ester (CA INDEX NAME)



IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST lithium battery electrolyte phosphate additive  
 IT Secondary batteries  
   (lithium; phosphate additives for nonaq.  
   electrolyte rechargeable lithium batteries)  
 IT Battery electrolytes  
   (phosphate additives for nonaq. electrolyte  
   rechargeable lithium batteries)  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,  
 Propylene carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl  
 methyl carbonate 623-96-1, Dipropyl carbonate 872-36-6, Vinylene  
 carbonate 4437-85-8, Butylene carbonate 7439-93-2, Lithium, uses  
 35363-40-7, Ethyl propyl carbonate, uses 52627-24-4, Cobalt lithium  
 oxide 56525-42-9, Methyl propyl carbonate, uses  
   (phosphate additives for nonaq. electrolyte  
   rechargeable lithium batteries)  
 IT 1623-10-5, DiAllyl methyl phosphate 1623-11-6, Allyl dimethyl  
 phosphate 1623-19-4, TriAllyl phosphate 1779-34-6, TriPropargyl  
 phosphate 25022-72-4, Allyl phosphate 55343-62-9, Propargyl  
 phosphate 56379-74-9 433979-69-2 433979-70-5  
 433979-71-6 433979-72-7  
   (phosphate additives for nonaq. electrolyte  
   rechargeable lithium batteries)

L66 ANSWER 31 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:271940 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 136:269629  
 TITLE: Forming electrolyte for forming metal  
   oxide coating film  
 INVENTOR(S): Ue, Makoto; Mizutani, Fumikazu; Takeuchi, Sachie;  
   Takaha, Hiroshi  
 PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan  
 SOURCE: U.S., 22 pp., Cont. of U.S. Ser. No. 341,664.  
   CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6368485	B1	20020409	US 2000-570557	20000512
JP 11229157	A	19990824	JP 1998-308154	19981029
JP 11246994	A	19990914	JP 1998-308155	19981029
JP 11260918	A	19990924	JP 1998-308156	19981029
JP 3608958	B2	20050112		
WO 9925906	A1	19990527	WO 1998-JP4957	19981102
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RM: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			JP 1997-316952	A 19971118
			JP 1997-321019	A 19971121
			JP 1997-322847	A 19971125
			JP 1997-325814	A 19971127
			JP 1998-120427	A 19980430
			JP 1998-121907	A 19980501
			WO 1998-JP4957	W 19981102
			US 1999-341664	A2 19990920

ED Entered STN: 11 Apr 2002

AB Disclosed is a forming electrolyte for forming metal oxide coating films which comprises one or more kinds of solutes selected from the group consisting of a salt of inorg. acid and salt of organic carboxylic acid dissolved in a solvent having an alc. hydroxyl group or aprotic organic solvent, provided that, when the solvent having an alc. hydroxyl group is selected, the salt of organic carboxylic acid is selected from salts of aromatic carboxylic acids, salts of aliphatic polycarboxylic acid having 3-5 carbon atoms with no hydroxyl groups, salts of monohydroxy carboxylic acid having 2-5 carbon atoms, and salts of amino acid. By anodically oxidizing metal using the forming electrolyte, there can be formed an oxide coating film of high insulation property with a high throughput, in which hillocks are effectively suppressed.

IT 35365-94-7, Triethylammonium dihydrogen phosphate  
(electrolyte for forming anodic oxide coating film on  
aluminum on base of alc. containing)

RN 35365-94-7 HCAPLUS

CN Ethanamine, N,N-diethyl-, phosphate (1:1) (CA INDEX NAME)

CM 1

CRN 7664-38-2

CMF H3 O4 P



CM 2

CRN 121-44-8

CMF C6 H15 N



- IC ICM C25D003-00  
ICS C25D007-06; C25D007-12; C25D009-06  
INCL 205234000  
CC 72-7 (Electrochemistry)  
Section cross-reference(s): 56, 76  
ST electrolyte forming metal oxide coating film  
IT Electrodeposits  
(anodic; forming electrolyte for forming metal oxide coating film)  
IT Current density  
(for anodization of aluminum and aluminum neodymium alloy with formation of metal oxide coating film in non-aq . solution containing ammonium salts)  
IT Coating materials  
Electrolytes  
(forming electrolyte for forming metal oxide coating film)  
IT Oxides (inorganic), processes  
(forming electrolyte for forming metal oxide coating film)  
IT Anodization  
(forming electrolyte for forming metal oxide coating film by)  
IT Aluminum alloy, base  
(with rare earth elements; forming electrolyte for forming metal oxide coating film on)  
IT 57-55-6, Propylene glycol, uses 107-21-1, Ethylene glycol, uses (electrolyte for forming anodic oxide coating film on aluminum on base of)  
IT 69-72-7, Salicylic acid, uses 523-24-0, Ammonium phthalate 528-94-9, Ammonium Salicylate 1863-63-4, Ammonium benzoate 2399-73-7, Bistriethylammonium sulfate 2746-73-8, Triethylmethylammonium salicylate, uses 3774-75-2 7440-62-2D, Vanadium, tetraethylammonium salts of oxo acids 12007-89-5, Ammonium boron oxide ((NH4)B5O8) 13716-99-9, Ammonium maleate 14307-43-8,

Ammonium tartrate 18815-40-2, Ammonium malonate 35365-94-7  
 , Triethylammonium dihydrogen phosphate 133405-81-9 224632-38-6  
 (electrolyte for forming anodic oxide coating film on  
 aluminum on base of alc. containing)

IT 77518-84-4 405199-04-4  
 (forming electrolyte for forming metal oxide coating film  
 on)

IT 7429-90-5, Aluminum, uses  
 (forming electrolyte for forming metal oxide coating film  
 on)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 32 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:241430 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:188118  
 TITLE: Synthesis of hexa-methoxy-cyclo-tri-phosphazene  
 and studies of its use as a flame retardant  
 additive in Li-ion electrolytes

AUTHOR(S): Lee, Chang Woo; Prakash, Jai  
 CORPORATE SOURCE: Center for Electrochemical Science and  
 Engineering, Department of Chemical and  
 Environmental Engineering, Illinois Institute of  
 Technology, Chicago, IL, 60616, USA

SOURCE: Annual Battery Conference on Applications and  
 Advances, 17th, Long Beach, CA, United States,  
 Jan. 15-18, 2002 (2002), 167-172.  
 Editor(s): Das, Radhe S. L.; Frank, Harvey.  
 Institute of Electrical and Electronics Engineers:  
 New York, N. Y.  
 CODEN: 69CKHG; ISBN: 0-7803-7132-1

DOCUMENT TYPE: Conference  
 LANGUAGE: English

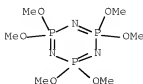
ED Entered STN: 30 Mar 2002

AB The flame retardant (FR) additive hexamethoxy-cyclotriphosphazene (I)  
 [NP(OCH<sub>3</sub>)<sub>2</sub>]<sub>3</sub> was synthesized using literature procedures. The electrochem.  
 and thermal properties of Li-ion electrolytes containing I were measured using  
 cyclic voltammetry and accelerating rate calorimetry. The effect of this  
 additive on the electrochem. performance of Li-ion cells was investigated in  
 Li<sub>x</sub>C/Li<sub>1-x</sub>Ni<sub>0.8</sub>Co<sub>0.2</sub> type coin cells.

IT 957-13-1, Hexamethoxycyclotriphosphazene  
 (flame retardant; hexamethoxycyclotriphosphazene flame retardant  
 additive in Li-ion electrolytes for secondary batteries)

RN 957-13-1 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine  
 1, 3, 5, 2, 4, 6-Triazatriphosphorine, 2, 2, 4, 4, 6, 6-hexamethoxy- (CA INDEX  
 NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 50

ST fireproofing agent methoxycyclotriphosphazene lithium electrolyte battery; secondary lithium battery electrolyte flame retardant

IT Carbon black, uses (comps. with lithium, battery electrode; hexamethoxycyclotriphosphazene flame retardant additive in Li-ion electrolytes for secondary batteries)

IT Fireproofing agents (hexamethoxycyclotriphosphazene flame retardant additive in Li-ion electrolytes for secondary batteries)

IT Battery electrolytes (nonaq.; hexamethoxycyclotriphosphazene flame retardant additive in Li-ion electrolytes for secondary batteries)

IT 160407-64-7, Cobalt lithium nickel oxide (Co<sub>0.2</sub>Li<sub>0.1</sub>Ni<sub>0.8</sub>O<sub>2</sub>) (battery electrode; hexamethoxycyclotriphosphazene flame retardant additive in Li-ion electrolytes for secondary batteries)

IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate 21324-40-3, Lithium hexafluorophosphate (battery electrolyte containing; hexamethoxycyclotriphosphazene flame retardant additive in Li-ion electrolytes for secondary batteries)

IT 957-13-1, Hexamethoxycyclotriphosphazene (flame retardant; hexamethoxycyclotriphosphazene flame retardant additive in Li-ion electrolytes for secondary batteries)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 33 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:219985 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:250266  
 TITLE: Additive for secondary nonaqueous electrolyte battery and the battery  
 Otsuki, Masatomo; Endo, Shigeki; Ogino, Takao  
 INVENTOR(S):  
 PATENT ASSIGNEE(S): Bridgestone Corp., Japan  
 SOURCE: Jpn. Kokai Tokyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2002083628	A	20020322	JP 2000-272077	20000907
			<--	
PRIORITY APPLN. INFO.:			JP 2000-272077	20000907
			<--	
OTHER SOURCE(S): MARPAT 136:250266				
ED Entered STN: 22 Mar 2002				
GI				

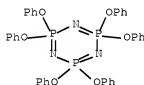


AB The additive contains a phosphazene derivative I (R1-3 = monovalent substituent or halogen and contains at least F; X = C, Si, Ge, Sn, N, P, As, Sb, Bi, O, S, Se, Te, and/or Po; Y1-3 = bivalent connecting group, bivalent element, or single bond) or II (R4 = monovalent substituent or halogen with  $\geq 1$  R4 in the whole mol. being an allyloxyl group, n = 3 or 4). The battery contains the additive.

IT 1184-10-7 403854-29-5  
(phosphazene derivative additives in electrolyte solns. for secondary lithium batteries)

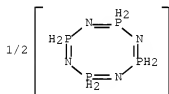
RN 1184-10-7 HCAPLUS

CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
2, 2, 4, 4, 6, 6-hexaphenoxy- (CA INDEX NAME)



RN 403854-29-5 HCAPLUS

CN 1, 3, 5, 7, 2, 4, 6, 8-Tetrazatetraphosphocine, hexaethoxy-2, 2, 4, 4, 6, 6, 8, 8-octahydrodiphenoxy- (9CI) (CA INDEX NAME)



3 ( D1-O-Et )

D1-O-Ph

IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary nonaq battery phosphazene deriv additive

IT Battery electrolytes



(phosphazene derivative additives in electrolyte solns. for secondary lithium batteries)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate (electrolyte solns. containing phosphazene derivative additives for secondary lithium batteries)

IT 1184-10-7 403854-29-5 (phosphazene derivative additives in electrolyte solns. for secondary lithium batteries)

L66 ANSWER 34 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:219973 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 136:234773  
 TITLE: Secondary nonaqueous electrolyte battery and its manufacture  
 INVENTOR(S): Tomita, Takashi  
 PATENT ASSIGNEE(S): Sony Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002083602	A	20020322	JP 2001-27667	20010205
			<--	
PRIORITY APPLN. INFO.:			JP 2000-195661	A 20000629
			<--	

ED Entered STN: 22 Mar 2002

AB The battery use H3PO4 compound polymer coated Li intercalating carbonaceous granules for anode. The battery is prepared by coating carbonaceous granules with an aqueous solution of the H3PO4 compound, and polymerizing the compound by heating.

IT 10124-31-9, Ammonium phosphate (in manufacture of phosphate polymer coated graphite granules for secondary lithium battery anodes)

RN 10124-31-9 HCAPLUS

CN Phosphoric acid, ammonium salt (1:?) (CA INDEX NAME)



● NH3

IC ICM H01M004-62  
 ICS H01M004-02; H01M004-04; H01M004-58; H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 IT 10124-31-9, Ammonium phosphate

(in manufacture of phosphate polymer coated graphite granules for secondary lithium battery anodes)

L66 ANSWER 35 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:205800 HCAPLUS Full-text

DOCUMENT NUMBER: 137:52498

TITLE: Low-molecular-weight chiral cation exchangers: novel chiral stationary phases and their application for enantioseparation of chiral bases by nonaqueous capillary electrochromatography

AUTHOR(S): Tobler, Ernst; Lammerhofer, Michael; Wuggenig, Frank; Hammerschmidt, Friedrich; Lindner, Wolfgang  
CORPORATE SOURCE: Institute of Analytical Chemistry, University of Vienna, Vienna, A-1090, Austria

SOURCE: Electrophoresis (2002), 23(3), 462-476

CODEN: ELCTDN; ISSN: 0173-0835

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 19 Mar 2002

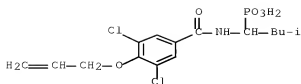
AB Cation exchange type chiral stationary phases (CSPs) based on 3,5-dichlorobenzoyl amino acid and amino phosphonic acid derivs. as chiral selectors (SOs) and silica as chromatog. support were developed and applied to enantiomer sepsns. of chiral bases by nonaq. capillary electrochromatog. (NA-CEC). As a rationale for efficient CSP development we adopted the combined use of the "reciprocity principle of chiral recognition" and nonaq. ion-pair CE as screening assay. Thus, (S)-atenolol was employed as chiral counter-ion added to the BGE in CE and a series of N-derivatized amino acids and amino phosphonic acids were screened to derive reciprocally information on their chiral recognition abilities for atenolol enantiomers. Two SO candidates, namely N-(3,5-dichlorobenzoyl)-O-allyl-tyrosine and N-(4-allyloxy-3,5-dichlorobenzoyl)-l-amino-3-methylbutane phosphonic acid that was identified as potential SOs in the CE screening were, after immobilization on thiol-modified silica, evaluated in cation-exchange NA-CEC. The strong chiral cation exchanger with the free phosphonic acid group exhibited enhanced enantioselectivity compared to the weak chiral cation exchanger with the carboxylic acid group. A wide variety of chiral bases could be successfully resolved on the strong chiral cation exchanger with  $\alpha$ -values up to 2.2 and efficiencies up to 375000 m<sup>-1</sup> including  $\beta$ -blockers and other amino alcs., local anesthetics like etidocaine, antimalarial agents like mefloquine, Troger's base, phenothiazines like promethazine, and antihistaminics. The influence of several exptl. parameters ( electrolyte concentration, acid-base ratio and acetonitrile-methanol ratio) was evaluated.

IT 437999-41-2 437999-42-3 437999-43-4

(resolution of drugs by capillary electrophoresis using chiral stationary phase modified with low-mol.-weight chiral cation exchangers)

RN 437999-41-2 HCAPLUS

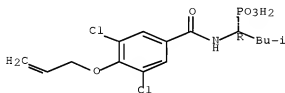
CN Phosphonic acid, [1-[[3,5-dichloro-4-(2-propenyloxy)benzoyl]amino]-3-methylbutyl]- (9CI) (CA INDEX NAME)



RN 437999-42-3 HCAPLUS

CN Phosphonic acid, [(1R)-1-[[3,5-dichloro-4-(2-propenyloxy)benzoyl]amino]-3-methylbutyl]- (9CI) (CA INDEX NAME)

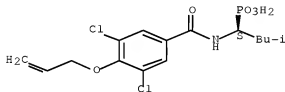
Absolute stereochemistry.



RN 437999-43-4 HCAPLUS

CN Phosphonic acid, [(1S)-1-[[3,5-dichloro-4-(2-propenyloxy)benzoyl]amino]-3-methylbutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



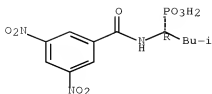
IT 437999-61-6 437999-62-7

(resolution of drugs by capillary electrophoresis using chiral stationary phase modified with low-mol.-weight chiral cation exchangers)

RN 437999-61-6 HCAPLUS

CN Phosphonic acid, [(1R)-1-[(3,5-dinitrobenzoyl)amino]-3-methylbutyl]- (9CI) (CA INDEX NAME)

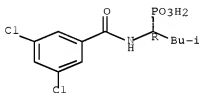
Absolute stereochemistry.



RN 437999-62-7 HCAPLUS

CN Phosphonic acid, [(1R)-1-[(3,5-dichlorobenzoyl)amino]-3-methylbutyl]-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



CC 64-3 (Pharmaceutical Analysis)

IT Antimalarials

Capillary electrochromatography

Chromatographic stationary phases

Resolution (separation)

$\beta$ -Adrenoceptor antagonists

(resolution of drugs by capillary electrophoresis using chiral  
stationary phase modified with low-mol.-weight chiral cation  
exchangers)

IT 54-30-8 60-87-7 125-53-1 299-42-3, (-)-Ephedrine 321-98-2,  
(+)-Ephedrine 469-21-6 525-66-6 846-49-1 1221-70-1 2470-73-7  
3703-79-5 3930-20-9 4199-09-1 5051-22-9 5302-35-2 5302-36-3  
6452-71-7 6673-35-4 7413-36-7 10476-53-6 13523-86-9  
13655-52-2 14051-33-3 14556-46-8 14645-24-0, (-)-Troger's base  
18507-09-0 21451-74-1, (+)-Troger's base 21888-98-2 21888-99-3  
22664-55-7 22972-96-9 23694-81-7 23846-71-1 23846-72-2  
26328-11-0 26328-12-1 27262-45-9 27262-47-1 29122-68-7  
30236-31-8 30236-32-9 31576-00-8 34915-68-9 36507-48-9  
36637-18-0 37517-30-9 37936-65-5 37936-66-6 38104-34-6  
38188-41-9 38188-42-0 38363-40-5 38363-41-6 38396-39-3  
46905-83-3 47416-60-4 49752-90-1 51384-51-1 51688-68-7,  
(+)-Mefloquine 51742-87-1, (-)-Mefloquine 52849-56-6 52849-58-8  
53214-57-6 54063-53-5 57460-41-0 57775-29-8 59383-52-7  
59995-59-4 61877-83-6 67253-23-0 68107-81-3 68107-82-4  
68374-35-6 71369-59-0 71369-60-3 74027-60-4 74748-13-3  
76210-47-4 76210-49-6 76792-96-6 76792-97-7 78859-33-3  
78859-34-4 81024-42-2 81024-43-3 86383-21-3 91402-80-1  
92007-66-4 92998-17-9 93379-54-5 95586-80-4 95586-81-5  
107381-31-7 107381-32-8 110032-65-0 111051-31-1 111051-32-2  
114747-00-1 138584-25-5 138584-26-6 145819-91-6 190773-00-3  
200944-08-7 437999-38-7 437999-39-8 437999-39-8 437999-40-1  
437999-41-2 437999-42-3 437999-43-4  
437999-44-5 437999-45-6 437999-46-7 437999-47-8 437999-48-9

437999-49-0 437999-55-8 437999-56-9 437999-57-0 437999-58-1  
 437999-59-2 437999-64-9 437999-65-0 438526-54-6 438526-57-9  
 (resolution of drugs by capillary electrophoresis using chiral  
 stationary phase modified with low-mol.-weight chiral cation  
 exchangers)

IT 116934-95-3 437999-60-5 437999-61-6 437999-62-7  
 437999-63-8  
 (resolution of drugs by capillary electrophoresis using chiral  
 stationary phase modified with low-mol.-weight chiral cation  
 exchangers)

REFERENCE COUNT: 73 THERE ARE 73 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 36 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:185513 HCAPLUS Full-text

DOCUMENT NUMBER: 136:203115

TITLE: Additive for secondary nonaqueous  
 electrolyte battery and double layer  
 capacitor, the battery, and the capacitor  
 Otsuki, Masashi; Endo, Shigeki; Ogino, Takao  
 INVENTOR(S):  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 35 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese

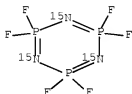
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021631	A1	20020314	WO 2001-JP7692	20010905
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084432	A	20020322	AU 2001-84432	20010905
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CA 2422109	A1	20030307	CA 2001-2422109	20010905
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EP 1329975	A1	20030723	EP 2001-963433	20010905
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 20030175598	A1	20030918	US 2003-363542	20030305
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US 7099142	B2	20060829	JP 2000-272082	A 20000907
<--				
JP 2000-272083				
<--				
WO 2001-JP7692				
<--				
W 20010905				

PRIORITY APPLN. INFO.:

ED Entered STN: 15 Mar 2002  
 AB The additive contains a phosphazene derivative (PNF2)3-14.  
 IT 72924-67-5  
 (cyclic phosphazene additives in nonaq.  
 electrolyte solns. for secondary lithium batteries and  
 double layer capacitors)  
 RN 72924-67-5 HCAPLUS  
 CN 1,3,5,2,4,6-Triazatriphosphorine-1,3,5-15N3, 2,2,4,4,6,6-hexafluoro-  
 2,2,4,4,6,6-hexahydro- (9CI) (CA INDEX NAME)



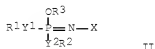
IC ICM H01M010-40  
 ICS H01M006-16; H01G009-038  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)  
 ST secondary nonaq battery phosphazene deriv additive; double  
 layer capacitor phosphazene deriv additive  
 IT Battery electrolytes  
 (cyclic phosphazene additives in nonaq.  
 electrolyte solns. for secondary lithium batteries)  
 IT Cyclophosphazenes  
 (cyclic phosphazene additives in nonaq.  
 electrolyte solns. for secondary lithium batteries and  
 double layer capacitors)  
 IT Capacitors  
 (double layer; cyclic phosphazene additives in nonaq.  
 electrolyte solns. for double layer capacitors)  
 IT 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium  
 tetrafluoroborate  
 (cyclic phosphazene additives in nonaq.  
 electrolyte solns. for double layer capacitors)  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
 14283-07-9, Lithium fluoro borate 21324-40-3, Lithium  
 hexafluorophosphate  
 (cyclic phosphazene additives in nonaq.  
 electrolyte solns. for secondary lithium batteries)  
 IT 72924-67-5  
 (cyclic phosphazene additives in nonaq.  
 electrolyte solns. for secondary lithium batteries and  
 double layer capacitors)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 37 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:185512 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 136:219552  
 TITLE: Additive for secondary nonaqueous  
 electrolyte battery and double layer

capacitor  
 INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 47 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021630	A1	20020314	WO 2001-JP7691	20010905
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, ID, TG				
AU 2001084431	A	20020322	AU 2001-84431	20010905
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CA 2422108	A1	20030307	CA 2001-2422108	20010905
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EP 1328036	A1	20030716	EP 2001-963432	20010905
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 20030175597	A1	20030918	US 2003-363172	20030331
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US 7067219	B2	20060627		
PRIORITY APPLN. INFO.:				
			JP 2000-272084	A 20000907
<--				
			JP 2000-272085	A 20000907
<--				
			WO 2001-JP7691	W 20010905
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OTHER SOURCE(S): MARPAT 136:219552				
ED Entered STN: 15 Mar 2002				
GI				



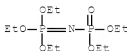
AB The additive contains phosphazene derivs. I or II, where R1-3 = monovalent substituent or halogen atom; X = substituent containing C, Si, Ge, Sn, N, P, As, Sb, Bi, O, S, Se, Te, and/or Po; and Y1 and Y2 = bivalent connecting group, bivalent element, or single bond.

IT 2297-48-0 3654-42-0

(phosphazene derivative additives in nonaq.  
electrolytes for secondary lithium batteries and double  
layer capacitors)

RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA  
INDEX NAME)



RN 3654-42-0 HCAPLUS

CN Imidodiphosphoric acid, ethyl-, tetraethyl ester (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)



IC ICM H01M010-40

ICS H01M006-16; H01G009-038

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
Technology)

Section cross-reference(s): 76

ST secondary battery nonaq electrolyte phosphazene  
deriv additive; double layer capacitor electrolyte  
phosphazene deriv additive

IT Capacitors

(double layer; electrolytes containing phosphazene derivative  
additives for double layer capacitors)

IT Battery electrolytes

(electrolytes containing phosphazene derivative additives for  
secondary lithium batteries)

IT Phosphazenes

(phosphazene derivative additives in nonaq.  
electrolytes for secondary lithium batteries and double  
layer capacitors)

IT 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium  
tetrafluoroborate

(electrolytes containing phosphazene derivative additives for  
double layer capacitors)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate

14283-07-9, Lithium fluoroborate 21324-40-3, Lithium  
hexafluorophosphate

(electrolytes containing phosphazene derivative additives for  
secondary lithium batteries)

IT 2397-48-0 3654-42-0



(phosphazene derivative additives in nonaq.  
electrolytes for secondary lithium batteries and double  
layer capacitors)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L66 ANSWER 38 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:185510 HCAPLUS Full-text

DOCUMENT NUMBER: 136:203113

TITLE: Nonaqueous electrolyte  
solution additive, secondary nonaqueous  
electrolyte battery, and  
nonaqueous double layer capacitor

INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao

PATENT ASSIGNEE(S): Bridgestone Corporation, Japan

SOURCE: PCT Int. Appl., 42 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

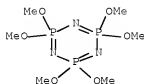
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021628	A1	20020314	WO 2001-JP7689	20010905
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084429	A	20020322	AU 2001-84429	20010905
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CA 2422106	A1	20030307	CA 2001-2422106	20010905
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EP 1347530	A1	20030924	EP 2001-963430	20010905
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1592984	A	20050309	CN 2001-815114	20010905
<--				
US 20030190531	A1	20031009	US 2003-363541	20030305
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PRIORITY APPLN. INFO.:			JP 2000-272078	A 20000907
			<--	
			JP 2000-272079	A 20000907
			<--	
			WO 2001-JP7689	W 20010905
			<--	

OTHER SOURCE(S): MARPAT 136:203113

ED Entered STN: 15 Mar 2002

AB The additive is a phosphazene derivative (PNR2)<sub>n</sub> (R = halogen or monovalent substituent, n = 3-6), which is a solid at 25°. The battery and the capacitor use an electrolyte containing the additive.

IT 957-13-1  
 (nonaq. electrolyte solns. containing phosphazene  
 derivative additives for batteries and capacitors)  
 RN 957-13-1 HCAPLUS  
 CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine  
 1, 3, 5, 2, 4, 6-Triazatriphosphorine, 2, 2, 4, 4, 6, 6-hexamethoxy- (CA INDEX  
 NAME)



IC ICM H01M010-40  
 ICS H01M006-16; H01G009-038  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)  
 Section cross-reference(s): 76  
 ST secondary battery nonaq electrolyte phosphazene  
 additive; double layer capacitor nonaq electrolyte  
 phosphazene additive  
 IT Capacitors  
 (double layer; nonaq. electrolyte solns. containing  
 phosphazene derivative additives for double layer capacitors)  
 IT Phosphazenes  
 (nonaq. electrolyte solns. containing phosphazene  
 derivative additives for batteries and capacitors)  
 IT Battery electrolytes  
 (nonaq. electrolyte solns. containing phosphazene  
 derivative additives for secondary lithium batteries)  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium  
 hexafluorophosphate  
 (nonaq. electrolyte solns. containing phosphazene  
 derivative additives for batteries and capacitors)  
 IT 957-13-1  
 (nonaq. electrolyte solns. containing phosphazene  
 derivative additives for batteries and capacitors)  
 REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 39 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2002:138998 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:186643  
 TITLE: Nonaqueous electrolyte  
 secondary battery  
 INVENTOR(S): Atsumi, Yoshinori; Yamamoto, Masahiro; Ohta, Yasuo  
 PATENT ASSIGNEE(S): Sony Corporation, Japan  
 SOURCE: Eur. Pat. Appl., 11 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1180811	A2	20020220	EP 2001-119842	20010816
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EP 1180811	A3	20031126		
			R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO	
JP 2002134112	A	20020510	JP 2001-228239	20010727
			<--	
JP 3826746	B2	20060927		
US 20050053835	A1	20050310	US 2001-932050	20010817
			<--	
US 20080032195	A1	20080207	US 2007-736822	20070418
			<--	
PRIORITY APPLN. INFO.:			JP 2000-248672	A 20000818
			<--	
			JP 2001-228239	A 20010727
			<--	
			US 2001-932050	A1 20010817
			<--	
ED	Entered STN: 22 Feb 2002			
AB	A nonaq. electrolyte secondary cell including: a cathode containing a compound expressed by a general formula $AxMyPO_4$ (wherein A represents an alkali metal and M represents a transition element, which are contained in ranges: $0 < x \leq 2$ and $1 \leq y \leq 2$ ); an anode containing sintered carbon material prepared by sintering a carbon material capable of doping/dedoping lithium; and a nonaq. electrolyte solution. This nonaq. electrolyte secondary cell can exhibit a high temperature storage characteristic and a high capacity.			
IT	7783-28-0, Diammonium hydrogen phosphate (nonaq. electrolyte secondary battery)			
RN	7783-28-0 HCAPLUS			
CN	Phosphoric acid, ammonium salt (1:2) (CA INDEX NAME)			



●2 NH<sub>3</sub>

IC ICM H01M004-58  
 ICS H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST lithium battery nonaq electrolyte secondary  
 IT Secondary batteries  
 (lithium; nonaq. electrolyte secondary battery)  
 IT Battery cathodes  
 (nonaq. electrolyte secondary battery)  
 IT Carbonaceous materials (technological products)  
 (nonaq. electrolyte secondary battery)

IT Carbon black, uses  
(nonaq. electrolyte secondary battery)

IT Fluoropolymers, uses  
(nonaq. electrolyte secondary battery)

IT 554-13-2, Lithium carbonate 7783-28-0, Diammonium hydrogen phosphate 14567-67-0, Vivianite  
(nonaq. electrolyte secondary battery)

IT 108-32-7, Propylene carbonate 623-53-0, Ethyl methyl carbonate 7429-90-5, Aluminum, uses 7440-44-0, Carbon, uses 21324-40-3, Lithium hexafluorophosphate  
(nonaq. electrolyte secondary battery)

IT 15365-14-7P, Iron lithium phosphate FeLiPO4 22831-39-6P, Magnesium silicide (Mg2Si)  
(nonaq. electrolyte secondary battery)

L66 ANSWER 40 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:66770 HCAPLUS Full-text

DOCUMENT NUMBER: 136:121064

TITLE: Nonaqueous electrolyte lithium secondary battery

INVENTOR(S): Iwamoto, Kazuyu; Oura, Takafumi; Hatazaki, Makino; Yoshizawa, Hiroshi; Sonoda, Kumiko; Nakanishi, Shinji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 31 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

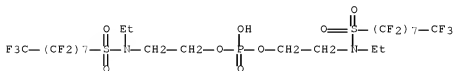
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1174940	A1	20020123	EP 2001-117048	20010712
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002033119	A	20020131	JP 2000-215518	20000717
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JP 2002033120	A	20020131	JP 2000-215519	20000717
			<--	
JP 2002033124	A	20020131	JP 2000-215520	20000717
			<--	
US 20020039677	A1	20020404	US 2001-901130	20010710
			<--	
US 6958198	B2	20051025		
KR 756812	B1	20070907	KR 2001-41192	20010710
			<--	
CN 1333580	A	20020130	CN 2001-123135	20010717
			<--	
PRIORITY APPLN. INFO.:			JP 2000-215518	A 20000717
			<--	
			JP 2000-215519	A 20000717
			<--	
			JP 2000-215520	A 20000717
			<--	

ED Entered STN: 24 Jan 2002

AB The invention relates to a nonaq. electrochem. apparatus in which the difference ( $\gamma_l$ - $\gamma_{se}$ ) between the surface tension  $\gamma_l$  of nonaq. electrolyte and

the surface free energy  $\gamma_{se}$  of electrode is not more than 10 dynes/cm. The nonaq. electrolyte contains a F-containing surface active agent.

- IT 2965-52-9  
(nonaq. electrolyte lithium secondary battery)  
RN 2965-52-8 HCAPLUS  
CN 1-Octanesulfonamide, N,N'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[N-ethyl-1,1,2,2,3,3,4,4,4,5,5,6,6,6,7,7,8,8,8-heptafluoro- (CA INDEX NAME)]



- IC ICM H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST nonaq electrolyte lithium secondary battery  
IT Carboxylic acids, uses  
(C2-20, fluoroalkyl; nonaq. electrolyte lithium secondary battery)  
IT Sulfonic acids, uses  
(alkanesulfonic, sodium salts, fluoro-; nonaq. electrolyte lithium secondary battery)  
IT Anhydrides  
Ethers, uses  
(cyclic; nonaq. electrolyte lithium secondary battery)  
IT Carboxylic acids, uses  
(esters, cyclic; nonaq. electrolyte lithium secondary battery)  
IT Secondary batteries  
(lithium; nonaq. electrolyte lithium secondary battery)  
IT Battery electrodes  
Battery electrolytes  
Surface free energy  
Surface tension  
Surfactants  
(nonaq. electrolyte lithium secondary battery)  
IT Carbonaceous materials (technological products)  
(nonaq. electrolyte lithium secondary battery)  
IT Cyclic compounds  
(nonaq. electrolyte lithium secondary battery)  
IT Lactones  
(nonaq. electrolyte lithium secondary battery)  
IT Fluoropolymers, uses  
(nonaq. electrolyte lithium secondary battery)  
IT 463-79-6D, Carbonic acid, esters 1343-98-2D, Silicic acid, esters  
7664-38-2D, Phosphoric acid, esters 7664-93-9D, Sulfuric acid,  
esters 7697-37-2D, Nitric acid, esters 7782-77-6D, Nitrous acid,  
esters 7782-99-2D, Sulfurous acid, esters 10043-35-3D, Boric acid,  
esters 13598-36-2D, Phosphorous acid, esters  
(cyclic; nonaq. electrolyte lithium secondary

battery)

IT 79-20-9, Methyl acetate 85-44-9, Phthalic anhydride 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 105-54-4, Ethyl butyrate 105-58-8, Diethyl carbonate 108-29-2,  $\gamma$ -Valerolactone 108-30-5, Succinic anhydride, uses 108-32-7, Propylene carbonate 109-60-4, n-Propyl acetate 123-86-4, Butyl acetate 140-11-4, Benzyl acetate 141-78-6, Ethyl acetate, uses 517-23-7,  $\alpha$ -Acetyl- $\gamma$ -butyrolactone 540-42-1, Isobutyl propionate 554-12-1, Methyl propionate 616-02-4, Citraconic anhydride 616-38-6, Dimethyl carbonate 623-53-0, Ethylmethyl carbonate 1679-47-6,  $\alpha$ -Methyl- $\gamma$ -butyrolactone 2170-03-8, Itaconic anhydride 2453-03-4, 1,3-Dioxan-2-one 7782-42-5, Graphite, uses 9002-88-4, Polyethylene 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 52627-24-4, Cobalt lithium oxide 52876-41-2, Trimethylene borate 90076-65-6 132843-44-8 201416-30-0, 4,5-Diphenyl-1,3,2-dioxathiole-2,2-dioxide 389604-01-7

(nonaq. electrolyte lithium secondary battery)

IT 77-79-2, Sulfolene 102-09-0, Diphenyl carbonate 126-33-0, Sulfolane 463-79-6D, Carbonic acid, ester 822-38-8, Ethylene trithiocarbonate 872-36-6, Vinylene carbonate 872-93-5, 3-Methylsulfolane 930-35-8, Vinylene trithiocarbonate 1120-71-4, Propanesultone 1600-44-8 1633-83-6, 1,4-Butanesultone 2171-74-6, 1,3-Benzodioxol-2-one 2965-52-8 3741-38-6, Ethylene sulfite 3967-54-2, Chloroethylene carbonate 4236-15-1 4427-92-3, Phenylethylene carbonate 4427-96-7, Vinylethylene carbonate 6255-58-9 7440-44-0, Carbon, uses 7704-34-9D, Sulfur, ester 16761-08-3 21240-34-6 37228-47-0, Ethylene phosphite 40630-61-3 52550-45-5 75032-95-0, Disodium N-perfluorooctanesulfonylglutamate 75046-16-1 122036-85-5 324547-56-0 366787-88-4

(nonaq. electrolyte lithium secondary battery)

IT 24937-79-9, PvdF

(nonaq. electrolyte lithium secondary battery)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 41 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:881968 HCAPLUS Full-text

DOCUMENT NUMBER: 136:21960

TITLE: Nonaqueous electrolyte battery

INVENTOR(S): Kikuchi, Masahiro; Yonekawa, Fumihiko; Wakui, Atsushi; Kamata, Tomohisa

PATENT ASSIGNEE(S): Nippon Chemical Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

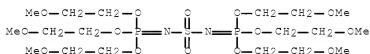
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001338683	A	20011207	JP 2000-157055	20000526
			<--	
PRIORITY APPLN. INFO.:			JP 2000-157055	20000526
			<--	

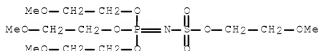
OTHER SOURCE(S): MARPAT 136:21960

ED Entered STN: 07 Dec 2001

- AB The battery has a Li intercalating spinel type Li Mn oxide cathode, a Li intercalating anode, and nonaq. Li ion electrolyte solution containing a Mn dissoln. inhibitor, which is a phosphazene derivative selected from (RO)3P:NSO3R1 (R and R1 = monovalent organic group) and (R2O)3P:NSO2N:P(OR3)3 (R2 and R3 = monovalent organic group).
- IT 271771-14-3 271771-15-4  
(electrolyte solns. containing phosphazene derivs. for preventing manganese dissoln. from cathodes in secondary lithium batteries)
- RN 271771-14-3 HCAPLUS
- CN Phosphorimidic acid, sulfonylbis-, hexakis(2-methoxyethyl) ester (9CI)  
(CA INDEX NAME)



- RN 271771-15-4 HCAPLUS
- CN Sulfamic acid, N-[tris(2-methoxyethoxy)phosphinylidene]-, 2-methoxyethyl ester (CA INDEX NAME)



- IC ICM H01M010-40  
ICS H01M004-02; H01M004-58
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST secondary lithium battery electrolyte manganese dissoln inhibitor phosphazene
- IT Battery cathodes  
Battery electrolytes  
(electrolyte solns. containing phosphazene derivs. for preventing manganese dissoln. from cathodes in secondary lithium batteries)
- IT Secondary batteries  
(lithium; electrolyte solns. containing phosphazene derivs. for preventing manganese dissoln. from cathodes in secondary lithium batteries)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 12057-17-9, Lithium manganese oxide (LiMn2O4) 21324-40-3, Lithium hexafluorophosphate  
(electrolyte solns. containing phosphazene derivs. for preventing manganese dissoln. from cathodes in secondary lithium batteries)
- IT 271771-14-3 271771-15-4  
(electrolyte solns. containing phosphazene derivs. for preventing manganese dissoln. from cathodes in secondary lithium

batteries)  
 IT 7439-96-5, Manganese, miscellaneous  
 (electrolyte solns. containing phosphazene derivs. for  
 preventing manganese dissoln. from cathodes in secondary lithium  
 batteries)

L66 ANSWER 42 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:881967 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:21959  
 TITLE: Nonaqueous electrolyte battery  
 INVENTOR(S): Fui, Samu; Narita, Yukio; Saito, Tadashi; Ohara,  
 Nobuhiko; Wakui, Atsushi; Kamata, Tomohisa  
 PATENT ASSIGNEE(S): Sony Corp., Japan; Nippon Chemical Industrial Co.,  
 Ltd.  
 SOURCE: Jpn. Kokai Tokyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001338682	A	20011207	JP 2000-157054	20000526
			<--	
PRIORITY APPLN. INFO.:			JP 2000-157054	20000526
			<--	

OTHER SOURCE(S): MARPAT 136:21959

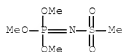
ED Entered STN: 07 Dec 2001

AB The battery has a cathode, a Li intercalating anode, and a nonaq. Li+  
 electrolyte solution containing a phosphazene derivative (RO)3P:NSO2R', where  
 R = (halogenated) C1-10 (branched) alkyl or (halogenated) Me(OCH2CH2)n- (n =  
 1-5), and R' = (halogenated) C1-12 alkyl or Ph group that may have halogen,  
 alkoxy, and/or C1-4 alkyl substituents.

IT 7109-06-0 62461-25-0 377780-53-5  
 377780-54-6 377780-55-7 377780-56-8  
 378795-41-6 378795-42-7 378795-43-8  
 378795-44-9 378795-45-0 378795-46-1  
 378795-47-2 378795-48-3 378795-49-4  
 378795-50-7  
 (solvent mixts. containing phosphazene derives for electrolyte  
 solns. in secondary lithium batteries)

RN 7109-06-0 HCAPLUS

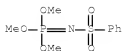
CN Phosphorimidic acid, (methylsulfonyl)-, trimethyl ester (7CI, 8CI,  
 9CI) (CA INDEX NAME)



RN 62461-25-0 HCAPLUS

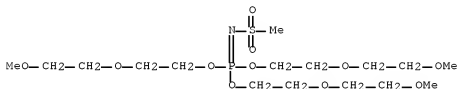
CN Phosphorimidic acid, (phenylsulfonyl)-, trimethyl ester (6CI, 9CI)  
 (CA INDEX NAME)





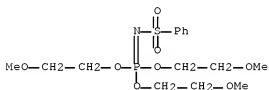
RN 377780-53-5 HCAPLUS

CN Phosphorimidic acid, (methylsulfonyl)-, tris[2-(2-methoxyethoxy)ethyl] ester (9CI) (CA INDEX NAME)



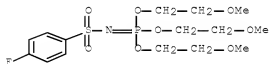
RN 377780-54-6 HCAPLUS

CN Phosphorimidic acid, (phenylsulfonyl)-, tris(2-methoxyethyl) ester (9CI) (CA INDEX NAME)



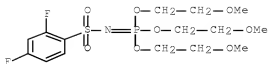
RN 377780-55-7 HCAPLUS

CN Phosphorimidic acid, [(4-fluorophenyl)sulfonyl]-, tris(2-methoxyethyl) ester (9CI) (CA INDEX NAME)



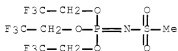
RN 377780-56-8 HCAPLUS

CN Phosphorimidic acid, [(2,4-difluorophenyl)sulfonyl]-, tris(2-methoxyethyl) ester (9CI) (CA INDEX NAME)



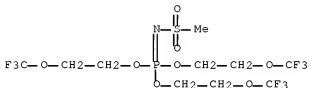
RN 378795-41-6 HCAPLUS

CN Phosphorimidic acid, (methylsulfonyl)-, tris(2,2,2-trifluoroethyl) ester (9CI) (CA INDEX NAME)



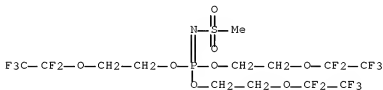
RN 378795-42-7 HCAPLUS

CN Phosphorimidic acid, (methylsulfonyl)-, tris[2-(trifluoromethoxy)ethyl] ester (9CI) (CA INDEX NAME)



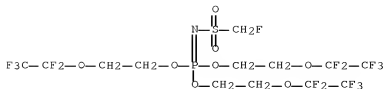
RN 378795-43-8 HCAPLUS

CN Phosphorimidic acid, (methylsulfonyl)-, tris[2-(pentafluoroethoxy)ethyl] ester (9CI) (CA INDEX NAME)



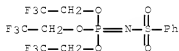
RN 378795-44-9 HCAPLUS

CN Phosphorimidic acid, [(fluoromethyl)sulfonyl]-, tris[2-(pentafluoroethoxy)ethyl] ester (9CI) (CA INDEX NAME)



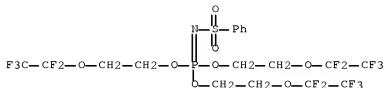
RN 378795-45-0 HCAPLUS

CN Phosphorimidic acid, (phenylsulfonyl)-, tris(2,2,2-trifluoroethyl) ester (9CI) (CA INDEX NAME)



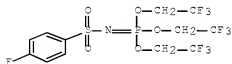
RN 378795-46-1 HCAPLUS

CN Phosphorimidic acid, (phenylsulfonyl)-, tris[2-(pentafluoroethoxy)ethyl] ester (9CI) (CA INDEX NAME)



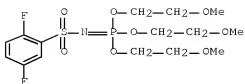
RN 378795-47-2 HCAPLUS

CN Phosphorimidic acid, [(4-fluorophenyl)sulfonyl]-, tris(2,2,2-trifluoroethyl) ester (9CI) (CA INDEX NAME)



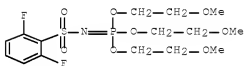
RN 378795-48-3 HCAPLUS

CN Phosphorimidic acid, [(2,5-difluorophenyl)sulfonyl]-, tris(2-methoxyethyl) ester (9CI) (CA INDEX NAME)



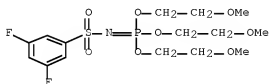
RN 378795-49-4 HCAPLUS

CN Phosphorimidic acid, [(2,6-difluorophenyl)sulfonyl]-,  
tris(2-methoxyethyl) ester (9CI) (CA INDEX NAME)



RN 378795-50-7 HCAPLUS

CN Phosphorimidic acid, [(3,5-difluorophenyl)sulfonyl]-,  
tris(2-methoxyethyl) ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M004-02; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
Technology)

ST secondary lithium battery electrolyte phosphazene deriv

IT Battery electrolytes  
(solvent mixts. containing phosphazene derives for electrolyte  
solns. in secondary lithium batteries)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
(solvent mixts. containing phosphazene derives for electrolyte  
solns. in secondary lithium batteries)

IT 7109-06-0 62461-25-0 377780-53-5  
377780-54-6 377780-55-7 377780-56-8  
378795-41-6 378795-42-7 378795-43-8  
378795-44-9 378795-45-0 378795-46-1  
378795-47-2 378795-48-3 378795-49-4  
378795-50-7

(solvent mixts. containing phosphazene derives for electrolyte  
solns. in secondary lithium batteries)

L66 ANSWER 43 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:833698 HCAPLUS Full-text  
 DOCUMENT NUMBER: 135:374116  
 TITLE: Secondary nonaqueous electrolyte battery  
 INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 44 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001086746	A1	20011115	WO 2001-JP3788	20010502
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W: JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,				
NL, PT, SE, TR				
EP 1289044	A1	20030305	EP 2001-926110	20010502
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				
PT, IE, FI, CY, TR				
US 20030108801	A1	20030612	US 2002-275008	20021031
<--				
US 7229719	B2	20070612		
KR 772496	B1	20071101	KR 2002-714627	20021031
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PRIORITY APPLN. INFO.:			JP 2000-134683	A 20000508
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			JP 2000-134684	A 20000508
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			JP 2000-134685	A 20000508
			<--	
			JP 2000-167468	A 20000605
			<--	
			WO 2001-JP3788	W 20010502
			<--	

OTHER SOURCE(S): MARPAT 135:374116  
 ED Entered SIN: 16 Nov 2001  
 GI

Y1R1  
 R2Y2-~~1~~N-X  
 13R3 I

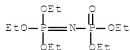
AB The batteries have cathodes, anodes, and a nonaq. electrolyte containing a supporting electrolyte and a phosphazene derivative. The phosphazene derivative is I (R1-3 = monovalent substituents or halogen atom; X = organic groups containing C, Si, Ge, Sn, N, P, As, Sb, Bi, O, S, Se, Te, and/or Po; Y1-3 = bivalent connection units, divalent elements, or single bonds) or (PNR42)n (R4 = monovalent substituent or halogen, n = 3-15).

IT 2397-48-0  
 (comps. of nonaq. electrolyte solns containing

phosphazene derivs. and lithium salts for secondary lithium  
batteries)

RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA  
INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
Technology)

ST secondary battery electrolyte phosphazene derive

IT Battery electrolytes

(comps. of nonaq. electrolyte solns containing  
phosphazene derivs. and lithium salts for secondary lithium  
batteries)

IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate  
105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate 623-53-0,  
Ethyl methyl carbonate 2397-48-0 21324-40-3, Lithium  
hexafluorophosphate

(comps. of nonaq. electrolyte solns containing  
phosphazene derivs. and lithium salts for secondary lithium  
batteries)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L66 ANSWER 44 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:657695 HCAPLUS Full-text

DOCUMENT NUMBER: 135:229350

TITLE: Secondary nonaqueous electrolyte  
batteries

INVENTOR(S): Shiga, Toru; Kawauchi, Shigehiro; Takeichi,  
Kensuke

PATENT ASSIGNEE(S): Toyota Central Research and Development  
Laboratories, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001243979	A	20010907	JP 2000-51971	20000228
			<--	
PRIORITY APPLN. INFO.:			JP 2000-51971	20000228
			<--	

ED Entered STN: 07 Sep 2001

AB The batteries have Li transition metal oxide cathodes, Li intercalating  
anodes, and a nonaq. electrolyte solution containing a dissolved Li salt;

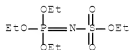
where the electrolyte solution contains a trialkoxyphosphazosulfonyl alkoxide or a mixture containing the alkoxide.

IT 271771-17-6 271771-18-7 271771-19-8  
358750-79-5

(solvent mixts containing trialkoxyphosphazosulfonyl alkoxide for electrolytes in secondary lithium batteries)

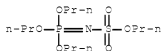
RN 271771-17-6 HCAPLUS

CN Sulfamic acid, N-(triethoxyphosphinylidene)-, ethyl ester (CA INDEX NAME)



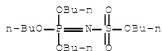
RN 271771-18-7 HCAPLUS

CN Sulfamic acid, N-(tripropoxyphosphinylidene)-, propyl ester (CA INDEX NAME)



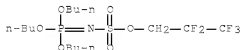
RN 271771-19-8 HCAPLUS

CN Sulfamic acid, N-(tributoxyphosphinylidene)-, butyl ester (CA INDEX NAME)



RN 358750-79-5 HCAPLUS

CN Sulfamic acid, N-(tributoxyphosphinylidene)-, 2,2,3,3-pentafluoropropyl ester (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST secondary lithium battery electrolyte solvent trialkoxyphosphazosulfonyl alkoxide  
 IT Battery electrolytes  
 (solvent mixts containing trialkoxyphosphazosulfonyl alkoxide for electrolytes in secondary lithium batteries)  
 IT 616-38-6, Dimethyl carbonate 21324-40-3, Lithium hexafluorophosphate 271771-17-6 271771-18-7 271771-19-8 358750-79-5  
 (solvent mixts containing trialkoxyphosphazosulfonyl alkoxide for electrolytes in secondary lithium batteries)

L66 ANSWER 45 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:579512 HCAPLUS Full-text

DOCUMENT NUMBER: 135:161203

TITLE: Nonaqueous electrolyte double-layer capacitors

INVENTOR(S): Otsuki, Masatomo; Endo, Shigeki; Ogino, Takao

PATENT ASSIGNEE(S): Bridgestone Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001217158	A	20010810	JP 2000-126574	20000426
			<--	
US 6452782	B1	20020917	US 2000-708717	20001109
			<--	
PRIORITY APPLN. INFO.:			JP 1999-334965	A 19991125
			<--	
			JP 1999-334960	A 19991125
			<--	
			JP 1999-334961	A 19991125
			<--	
			JP 1999-334966	A 19991125
			<--	
			JP 2000-126572	A 20000426
			<--	
			JP 2000-126573	A 20000426
			<--	
			JP 2000-126574	A 20000426
			<--	
			JP 2000-126575	A 20000426
			<--	

ED Entered STN: 10 Aug 2001

AB The title capacitors comprise an anode, a cathode, and a nonaq. electrolyte containing a supporting salt and  $\geq 20$  vol% phosphazene derivs. The electrolyte gives the capacitors excellent.

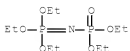
IT 2397-48-0

(electrolyte, non-aqueous  
 fire-resistance, optionally fluorinated; nonaq.  
 electrolyte double-layer capacitors)

RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)





IC ICM H01G009-038  
ICS C09K021-12  
CC 76-10 (Electric Phenomena)  
Section cross-reference(s): 72  
ST phosphazene electrolyte fire resistance capacitor  
IT Capacitors  
(double layer; nonaq. electrolyte double-layer capacitors)  
IT Fire-resistant materials  
(electrolyte; nonaq. electrolyte double-layer capacitors)  
IT Phosphazenes  
(halo-compound, electrolyte, fire-resistant; nonaq. electrolyte double-layer capacitors)  
IT Electrolytes  
(nonaq., fire-resistant; nonaq. electrolyte double-layer capacitors)  
IT Solvents  
(organic, non-protonic; nonaq. electrolyte double-layer capacitors)  
IT 2397-48-0  
(electrolyte, non-aqueous fire-resistance, optionally fluorinated; nonaq. electrolyte double-layer capacitors)  
IT 96-48-0,  $\gamma$ -Butyrolactone  
(non-protonic organic solvent; nonaq. electrolyte double-layer capacitors)  
IT 429-06-1, Tetraethylammonium tetrafluoroborate  
(supporting salt; nonaq. electrolyte double-layer capacitors)

L66 ANSWER 46 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2001:397249 HCAPLUS [Full-text](#)  
DOCUMENT NUMBER: 135:7799  
TITLE: Secondary nonaqueous electrolyte batteries, deterioration inhibitors for the batteries, and additives for the battery electrolyte  
INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao  
PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
SOURCE: PCT Int. Appl., 44 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----

WO 2001039314	A1	20010531	WO 2000-JP8041	20001115
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W: KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,				
NL, PT, SE, TR				
JP 2001217001	A	20010810	JP 2000-126568	20000426
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JP 2001217002	A	20010810	JP 2000-126569	20000426
			<--	
JP 2001217003	A	20010810	JP 2000-126570	20000426
			<--	
JP 2001217004	A	20010810	JP 2000-126571	20000426
			<--	
EP 1253662	A1	20021030	EP 2000-976252	20001115
			<--	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				
PT, IE, FI, CY, TR				
US 6955867	B1	20051018	US 2002-130069	20020515
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KR 775566	B1	20071109	KR 2002-706644	20020524
			<--	
PRIORITY APPLN. INFO.:			JP 1999-334953	A 19991125
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			JP 1999-334954	A 19991125
			<--	
			JP 1999-334955	A 19991125
			<--	
			JP 1999-334956	A 19991125
			<--	
			JP 2000-126568	A 20000426
			<--	
			JP 2000-126569	A 20000426
			<--	
			JP 2000-126570	A 20000426
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			JP 2000-126571	A 20000426
			<--	
			WO 2000-JP8041	W 20001115
			<--	

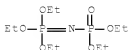
ED Entered STN: 01 Jun 2001

AB The batteries use a nonaq. electrolyte solution containing 2-20 volume% phosphazene derivs. and a supporting electrolyte. The supporting electrolyte is preferably LiPF<sub>6</sub>. The deterioration inhibitors and the electrolyte additives are the phosphazene derivs. The batteries are preferably secondary Li batteries.

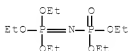
IT 2397-48-0 2397-48-0D, fluorinated  
(deterioration preventing phosphazene derivs. in electrolytes for secondary lithium batteries)

RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



RN 2397-48-0 HCAPLUS  
 CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA  
 INDEX NAME)



IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy  
 Technology)  
 IT Battery electrolytes  
 (electrolytes containing phosphazene derivs. for  
 deterioration prevention in secondary lithium batteries)  
 IT Secondary batteries  
 (lithium; deterioration preventing phosphazene derivs. in  
 electrolytes for secondary lithium batteries)  
 IT 2397-48-0 2397-48-0D, fluorinated  
 (deterioration preventing phosphazene derivs. in  
 electrolytes for secondary lithium batteries)  
 IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate  
 105-58-8, Diethyl carbonate 14283-07-9, Lithium fluoroborate  
 21324-40-3, Lithium hexafluorophosphate  
 (electrolytes containing phosphazene derivs. for  
 deterioration prevention in secondary lithium batteries)  
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 47 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:371211 HCAPLUS Full-text

DOCUMENT NUMBER: 135:146425

TITLE: Simultaneous separation of the  
 stereoisomers of 1-amino-2-hydroxy and  
 2-amino-1-hydroxypropane phosphonic acids by  
 stereoselective capillary electrophoresis  
 employing a quinine carbamate type chiral selector  
 AUTHOR(S): Lammerhofer, Michael; Zarbi, Elfriede; Lindner,  
 Wolfgang; Simov, Biljana Peric; Hammerschmidt,  
 Friedrich

CORPORATE SOURCE: Institute of Analytical Chemistry, University of  
 Vienna, Vienna, A-1090, Austria

SOURCE: Electrophoresis (2001), 22(6), 1182-1187

CODEN: ELCTDN; ISSN: 0173-0835

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 23 May 2001

AB A stereoselective nonaq. capillary electrophoresis (CE) method using O-(tert-butylcarbamoyl) quinine as chiral ion-pair agent and additive to the non-aqueous back-ground electrolyte was evaluated for the simultaneous separation of the enantiomers and diastereomers of 1-amino-2-hydroxypropane phosphonic acid besides the corresponding  $\beta$ -aminophosphonic acid analogs, the

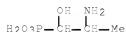
stereoisomers of 2-amino-1-hydroxy-propane phosphonic acid, in a single run. The sepsns. were carried out using the partial filling technique to avoid strong background signal from the quinine selector. It conveniently allowed the baseline separation of all eight components of interest ( $\alpha$ - as well as  $\beta$ -aminophosphonic acids) as N-2,4-dinitrophenyl derivs. in a single run. Also, the absolute configurations of all eight peaks were identified. Compared to the quinine carbamate selector, the corresponding pseudo-enantiomeric O-(tert-butylcarbamoyl) quinidine selector exhibited reserved elution order and nearly identical resols. The proposed CE method turned out to be advantageous over stereoselective HPLC with a quinine carbamate type stationary phase, which showed high enantioselectivity, but failed to simultaneously sep. all eight components.

IT 69165-78-2 84601-12-7 95691-30-8  
104173-12-8 104198-86-9 123708-51-0  
172370-98-6 172490-32-3 172490-33-4  
173800-69-2

(simultaneous separation of the stereoisomers of  
1-amino-2-hydroxy and 2-amino-1-hydroxypropane phosphonic acids by  
stereoselective capillary electrophoresis employing a quinine  
carbamate type chiral selector)

RN 69165-78-2 HCAPLUS

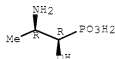
CN Phosphonic acid, (2-amino-1-hydroxypropyl)- (9CI) (CA INDEX NAME)



RN 84601-12-7 HCAPLUS

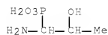
CN Phosphonic acid, [(1R,2R)-2-amino-1-hydroxypropyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 95691-30-8 HCAPLUS

CN Phosphonic acid, (1-amino-2-hydroxypropyl)- (9CI) (CA INDEX NAME)



RN 104173-12-8 HCAPLUS

CN Phosphonic acid, [(1S,2R)-1-amino-2-hydroxypropyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 104198-86-9 HCAPLUS

CN Phosphonic acid, [(1R,2R)-1-amino-2-hydroxypropyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 128708-51-0 HCAPLUS

CN Phosphonic acid, [(1S,2S)-1-amino-2-hydroxypropyl]- (9CI) (CA INDEX NAME)

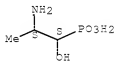
Absolute stereochemistry.



RN 172370-88-6 HCAPLUS

CN Phosphonic acid, [(1S,2S)-2-amino-1-hydroxypropyl]- (9CI) (CA INDEX NAME)

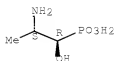
Absolute stereochemistry.



RN 172490-32-3 HCAPLUS

CN Phosphonic acid, [(1R,2S)-2-amino-1-hydroxypropyl]- (9CI) (CA INDEX NAME)

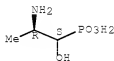
Absolute stereochemistry.



RN 172490-33-4 HCAPLUS

CN Phosphonic acid, [(1S,2R)-2-amino-1-hydroxypropyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 178802-69-2 HCAPLUS

CN Phosphonic acid, [(1R,2S)-1-amino-2-hydroxypropyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



CC 80-4 (Organic Analytical Chemistry)

Section cross-reference(s): 29

IT Resolution (separation)

(electrophoretic; simultaneous separation of the stereoisomers of 1-amino-2-hydroxy and 2-amino-1-hydroxypropane phosphonic acids by stereoselective capillary electrophoresis employing a quinine carbamate type chiral selector)

IT 190773-00-3, O-(tert-Butylcarbamoyl) quinine

(chiral ion pair agent; simultaneous separation of the stereoisomers of 1-amino-2-hydroxy and 2-amino-1-hydroxypropane phosphonic acids by stereoselective capillary electrophoresis employing a quinine carbamate type chiral selector)

IT 69165-76-2 84601-12-7 95691-30-8

104173-12-8 101196-86-9 128708-51-0

172370-68-6 172490-32-3 172490-33-4

178802-69-2

(simultaneous separation of the stereoisomers of 1-amino-2-hydroxy and 2-amino-1-hydroxypropane phosphonic acids by stereoselective capillary electrophoresis employing a quinine carbamate type chiral selector)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 48 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:101465 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:165659  
 TITLE: Secondary nonaqueous electrolyte  
 batteries  
 INVENTOR(S): Otsuki, Masahi; Endo, Shigeki; Ogino, Takao  
 PATENT ASSIGNEE(S): Bridgestone Corp., Japan  
 SOURCE: PCT Int. Appl., 53 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001009973	A1	20010208	WO 2000-JP5053 <--	20000728
W: KR, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2001102088	A	20010413	JP 2000-126566 <--	20000426
JP 2001217005	A	20010810	JP 2000-128240 <--	20000427
JP 2001217007	A	20010810	JP 2000-128241 <--	20000427
JP 2001217006	A	20010810	JP 2000-128242 <--	20000427
EP 1205997	A1	20020515	EP 2000-949929 <--	20000728
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
PRIORITY APPLN. INFO.:			JP 1999-214814 <--	A 19990729
			JP 1999-334957 <--	A 19991125
			JP 1999-334958 <--	A 19991125
			JP 1999-334959 <--	A 19991125
			JP 2000-126566 <--	A 20000426
			JP 2000-128240 <--	A 20000427
			JP 2000-128241 <--	A 20000427
			JP 2000-128242 <--	A 20000427
			WO 2000-JP5053 <--	W 20000728
OTHER SOURCE(S): MARPAT 134:165659				
ED Entered STN: 09 Feb 2001				
GI				

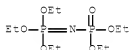


AB The batteries have cathodes, Li intercalating anodes, and a nonaq. electrolyte solution containing Li+ and a phosphazene derivative having flash point  $\geq 100^\circ$ . Preferably, the phosphazene is I (R1-3 = monovalent substituent or halogen; X = organic group containing C, Si, Ge, Sn, N, P, F, Sb, Bio, O, S, Se, Te, and/or Po; and Y1-3 = single bond, bivalent element or connection group) or (PNR42)<sub>n</sub> (R4 = monovalent substituent or halogen, n = 3-15).

IT 2397-48-0 324575-25-9  
(phosphazene derivs. with controlled flash point in electrolyte solns. for secondary lithium batteries)

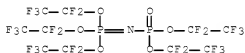
RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



RN 324575-25-9 HCAPLUS

CN Phosphorimidic acid, [bis(pentafluoroethoxy)phosphinyl]-, tris(pentafluoroethyl) ester (9CI) (CA INDEX NAME)



IC H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery electrolyte phosphazene flash point

IT Battery electrolytes  
(comps. of electrolyte solns. containing phosphazene derivs. with controlled flash point for secondary lithium batteries)

IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate  
(comps. of electrolyte solns. containing phosphazene derivs. with controlled flash point for secondary lithium batteries)

IT 2397-48-0 324575-25-9  
(phosphazene derivs. with controlled flash point in electrolyte solns. for secondary lithium batteries)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 49 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:62800 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:134086  
 TITLE: Nonaqueous electrolyte batteries  
 INVENTOR(S): Fui, Samu; Tomita, Takashi; Segawa, Takeshi  
 PATENT ASSIGNEE(S): Sony Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

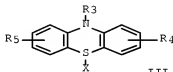
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001023687	A	20010126	JP 1999-196532	19990709
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PRIORITY APPLN. INFO.:			JP 1999-196532	19990709
			<--	
OTHER SOURCE(S): MARPAT 134:134086				
ED Entered STN: 26 Jan 2001				
GI				



I



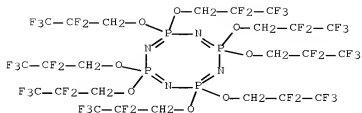
II



III

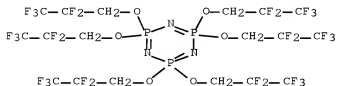
- AB Secondary Li batteries have a nonaq. electrolyte solution containing a phosphazene I [R1 and R2 = linear or branched (substituted) alkyl, (substituted) cyclic alkyl, (substituted) alkylene, or (substituted) alkylene oxide groups; n = integer 1-100] and a radical polymerization inhibitor. The phosphazene may be cyclic compound II (m = integer 3-10), and the radical polymerization inhibitor is preferably a S and N containing heterocyclic compound, e.g., III [R3-5 = H, linear or branched (substituted) alkyl, (substituted) cyclic alkyl, (substituted) alkylene, or (substituted), and X = 0-2 atoms].
- IT 429-16-3 429-18-5 992-79-0  
 1256-55-5 5116-77-8 28212-48-6  
 28779-94-4 36469-59-3 40081-32-1  
 58378-20-4 60495-46-7, Poly[nitrilo(diethoxyphosphor anylidyne)] 98972-15-0 321734-64-9  
 321734-65-0  
 (electrolyte solns. containing phosphazanes and heterocyclic radical polymerization inhibitors for secondary lithium batteries)
- RN 429-16-3 HCAPLUS
- CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octahydro-

2,2,4,4,6,6,8,8-octakis(2,2,3,3,3-pentafluoropropoxy)- (7CI, 8CI, 9CI)  
(CA INDEX NAME)



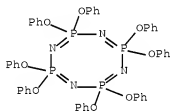
RN 429-18-5 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis(2,2,3,3,3-pentafluoropropoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



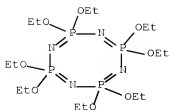
RN 992-79-0 HCAPLUS

CN 2λ5,4λ5,6λ5,8λ5-1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octaphenoxy- (CA INDEX NAME)



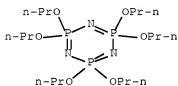
RN 1256-55-9 HCAPLUS

CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octaethoxy-2,2,4,4,6,6,8,8-octahydro- (7CI, 8CI, 9CI) (CA INDEX NAME)



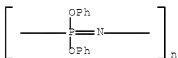
RN 5116-77-8 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexapropoxy- (7CI, 8CI, 9CI) (CA INDEX NAME)



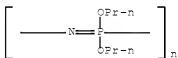
RN 28212-48-8 HCAPLUS

CN Poly[nitrilo(diphenoxyphosphoranylidene)] (CA INDEX NAME)



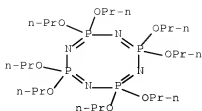
RN 28779-94-4 HCAPLUS

CN Poly[nitrilo(dipropoxyphosphoranylidene)] (9CI) (CA INDEX NAME)



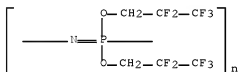
RN 36409-59-3 HCAPLUS

CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octahydro-2,2,4,4,6,6,8,8-octapropoxy- (7CI, 9CI) (CA INDEX NAME)



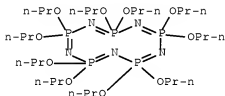
RN 40081-32-1 HCAPLUS

CN Poly[nitrilo{bis(2,2,3,3,3-pentafluoropropoxy)phosphoranylidene}]  
(9CI) (CA INDEX NAME)



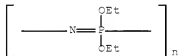
RN 58378-20-4 HCAPLUS

CN 1,3,5,7,9,2,4,6,8,10-Pentazapentaphosphocine, 2,2,4,4,6,6,8,8,10,10-decahydro-2,2,4,4,6,6,8,8,10,10-decapropoxy- (9CI) (CA INDEX NAME)



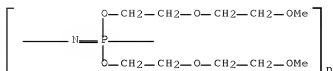
RN 60495-46-7 HCAPLUS

CN Poly[nitrilo(diethoxyphosphoranylidene)] (9CI) (CA INDEX NAME)



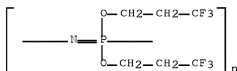
RN 98973-15-0 HCAPLUS

CN Poly[nitrilo{bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidene}] (CA INDEX NAME)



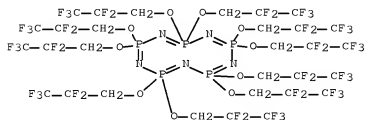
RN 321734-64-9 HCAPLUS

CN Poly[nitrilo[bis(3,3,3-trifluoropropoxy)phosphoranylidyne]] (9CI) (CA INDEX NAME)



RN 321734-65-0 HCAPLUS

CN 1,3,5,7,9,2,4,6,8,10-Pentazapentaphosphocine, 2,2,4,4,6,6,8,8,10,10-decahydro-2,2,4,4,6,6,8,8,10,10-decakis(2,2,3,3,3-pentafluoropropoxy)-(9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery electrolyte phosphazene polymn inhibitor; heterocyclic nitrogen sulfur compd lithium battery electrolyte

IT Battery electrolytes

(electrolyte solns. containing phosphazanes and heterocyclic radical polymerization inhibitors for secondary lithium batteries)

IT 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate (electrolyte solns. containing phosphazanes and heterocyclic radical polymerization inhibitors for secondary lithium batteries)

IT 92-84-2, 10H-Phenothiazine 429-16-3 429-18-5

592-79-0 1207-72-3 1209-66-1 1256-55-9

5116-77-8 28212-48-8 28779-94-4

36409-59-3 40081-32-1 58378-20-4

50495-46-7, Poly[nitrilo(diethoxyphosphoranylidyne)]

98973-15-0 320618-62-0 320618-63-1 321734-64-9

321734-65-9

(electrolyte solns. containing phosphazanes and heterocyclic  
radical polymerization inhibitors for secondary lithium batteries)

L66 ANSWER 50 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2000:739719 HCAPLUS [Full-text](#)  
DOCUMENT NUMBER: 133:298822  
TITLE: Synthesis of LiFePO<sub>4</sub> and manufacture of  
nonaqueous electrolyte batteries  
INVENTOR(S): Li, Guohua; Yamada, Atsuo  
PATENT ASSIGNEE(S): Sony Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 2000294238	A	20001020	JP 1999-99409	19990406
			<--	
PRIORITY APPLN. INFO.:			JP 1999-99409	19990406
			<--	

ED Entered STN: 20 Oct 2000

AB LiFePO<sub>4</sub> is manufactured from raw materials containing Fe oxalate, by forming precursors by mixing the raw materials and heating for their reactions. Optionally, the precursors are treated for degassing before firing. Nonaq. electrolyte battery comprising of LiFePO<sub>4</sub> cathode and Li-intercalating anode is manufactured by using LiFePO<sub>4</sub>, prepared by the above stated process. LiFePO<sub>4</sub> is manufactured at a low temperature without generation of gases during preparation

IT 7722-76-1, Ammonium dihydrogenphosphate  
(preparation of LiFePO<sub>4</sub>, for nonaq. battery cathodes, from iron oxalate by low-temperature firing without gas generation)

RN 7722-76-1 HCAPLUS

CN Phosphoric acid, ammonium salt (1:1) (CA INDEX NAME)



● NH<sub>3</sub>

IC ICM H01M004-58  
ICS C01G049-00; H01M004-02; H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 49  
ST lithium iron phosphate nonaq battery cathode; iron oxalate raw material battery cathode  
IT Secondary batteries  
(lithium; preparation of LiFePO<sub>4</sub>, for nonaq. battery cathodes,

- from iron oxalate by low-temperature firing without gas generation)
- IT Battery cathodes  
(preparation of LiFePO<sub>4</sub>, for nonaq. battery cathodes, from iron oxalate by low-temperature firing without gas generation)
- IT 15365-14-7P, Iron lithium phosphate (FeLiPO<sub>4</sub>)  
(preparation of LiFePO<sub>4</sub>, for nonaq. battery cathodes, from iron oxalate by low-temperature firing without gas generation)
- IT 554-13-2, Lithium carbonate 7722-76-1, Ammonium dihydrogenphosphate 15843-42-2, Iron oxalate  
(preparation of LiFePO<sub>4</sub>, for nonaq. battery cathodes, from iron oxalate by low-temperature firing without gas generation)

L66 ANSWER 51 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:

2000:700176 HCAPLUS Full-text

DOCUMENT NUMBER:

133:358686

TITLE:

tert.-Butylcarbamoylquinine as chiral ion-pair agent in non-aqueous enantioselective capillary electrophoresis applying the partial filling technique

AUTHOR(S):

Lammerhofer, Michael; Zarbi, Elfriede; Lindner, Wolfgang

CORPORATE SOURCE:

Institute of Analytical Chemistry, University of

SOURCE:

Vienna, Vienna, A-1090, Austria  
Journal of Chromatography, A (2000),  
892(1+2), 509-521

PUBLISHER:

Elsevier Science B.V.

DOCUMENT TYPE:

Journal

LANGUAGE:

English

ED Entered STN: 05 Oct 2000

- AB The potential of tert.-butylcarbamoylquinine as chiral selector (SO) added to a nonaq. background electrolyte for the capillary electrophoretic separation of the enantiomers of N-derivatized amino acids (selectands, SAs) is evaluated. Separation is based on different ion-pair formation equilibrium consts. of (R) and (S) enantiomers of the neg. charged chiral analytes with the pos. charged quinine-derived chiral SO and on mobility differences of free and complexed SAs, so that differences in the overall migration behavior of the SA enantiomers result. To suppress problems associated with the high UV absorption of the chiral SO and thus the high detector background in the total filling technique, the partial filling technique was adopted. Several parameters including filling time and length of SO zone, resp., SO concentration, type of background electrolyte, were evaluated. Using such an optimized method, for example, (R) and (S) enantiomers of 2,4-dinitrophenyl (DNP)-protected proline could be separated with  $\alpha$  1.08,  $R_s$  = 6.60, and  $N$  = 130,000 theor. plates within 15 min. Similar  $\alpha$  values, resolution, and efficiencies were observed for other DNP-protected, as well as for diverse, N-derivatized amino acids like N-benzoyl, N-9-fluorenylmethoxycarbonyl, N-3,5-dinitrobenzyloxycarbonyl amino acids. A repeatability study clearly validated the robustness of the method and revealed its practical applicability.

- IT 6323-97-3, DL-1-Aminoethylphosphonic acid 52863-92-9  
, (RS)-N-(2,4-Dinitrophenyl)-1-aminoethylphosphonic acid  
60687-36-7 60688-76-6 306298-79-3,  
(R)-N-(2,4-Dinitrophenyl)-1-aminoethylphosphonic acid  
306298-80-6, (S)-N-(2,4-Dinitrophenyl)-1-aminoethylphosphonic acid

(butylcarbamoylquinine as chiral ion-pair agent in nonaq. enantioselective capillary electrophoresis of N-protected amino acids)

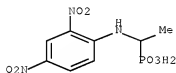
RN 6323-97-3 HCAPLUS

CN Phosphonic acid, P-(1-aminoethyl)- (CA INDEX NAME)



RN 52883-93-9 HCAPLUS

CN Phosphonic acid, [1-[(2,4-dinitrophenyl)amino]ethyl]- (9CI) (CA INDEX NAME)



RN 60687-36-7 HCAPLUS

CN Phosphonic acid, P-[(1R)-1-aminoethyl]- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 66068-76-6 HCAPLUS

CN Phosphonic acid, [(1S)-1-aminoethyl]- (9CI) (CA INDEX NAME)

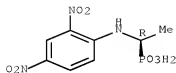
Absolute stereochemistry. Rotation (+).



RN 306298-79-3 HCAPLUS

CN Phosphonic acid, [(1R)-1-[(2,4-dinitrophenyl)amino]ethyl]- (9CI) (CA INDEX NAME)

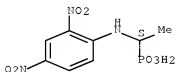
Absolute stereochemistry.





RN 306298-80-6 HCAPLUS  
 CN Phosphonic acid, [(1S)-1-[(2,4-dinitrophenyl)amino]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



- CC 80-4 (Organic Analytical Chemistry)  
 Section cross-reference(s): 34
- IT Amino acids, analysis  
 (N-protected; butylcarbamoylquinine as chiral ion-pair agent in non-aq. enantioselective capillary electrophoresis of N-protected amino acids)
- IT Capillary electrophoresis  
 Ion pairs  
 (butylcarbamoylquinine as chiral ion-pair agent in non-aqueous enantioselective capillary electrophoresis applying partial filling technique)
- IT Resolution (separation)  
 (electrophoretic; butylcarbamoylquinine as chiral ion-pair agent in non-aqueous enantioselective capillary electrophoresis applying partial filling technique)
- IT 35661-60-0, N-(9-Fluorenylmethoxycarbonyl)-L-leucine 114360-54-2, N-(9-Fluorenylmethoxycarbonyl)-D-leucine 126727-03-5, N-(9-Fluorenylmethoxycarbonyl)-DL-leucine  
 (butylcarbamoylquinine as chiral ion-pair agent in non-aqueous enantioselective capillary electrophoresis applying partial filling technique)
- IT 190773-00-3  
 (butylcarbamoylquinine as chiral ion-pair agent in non-aqueous enantioselective capillary electrophoresis applying partial filling technique)
- IT 61-90-5, L-Leucine, analysis 63-91-2, L-Phenylalanine, analysis 147-85-3, L-Proline, analysis 150-30-1, DL-β-Phenylalanine 328-38-1, D-Leucine 328-39-2, Leucine 344-25-2, D-Proline 541-48-0, DL-β-Aminobutyric acid 565-07-1 609-36-9, Proline 673-06-3, D-β-Phenylalanine 875-74-1, D-Phenylglycine 1466-83-7, Benzoyl-L-leucine 1492-24-6, L-α-Aminobutyric acid 1655-52-3, N-(2,4-Dinitrophenyl)-L-alanine 1655-55-6, N-(2,4-Dinitrophenyl)-L-proline 1655-57-8, N-(2,4-Dinitrophenyl)-L-leucine 2623-91-8, D-α-Aminobutyric acid 2835-06-5, DL-Phenylglycine 2835-81-6, DL-α-Aminobutyric acid 2901-76-0, N-Benzoyl-DL-phenylalanine 2935-35-5, L-Phenylglycine 3775-72-2, L-β-Aminobutyric acid 3775-73-3, D-β-Aminobutyric acid 6323-97-3, DL-1-Aminoethylphosphonic acid 6367-22-2, N-(2,4-Dinitrophenyl)-D-alanine 7495-01-4, N-(3,5-Dinitrobenzoyl)-L-leucine 10189-66-9, N-(2,4-Dinitrophenyl)-D-proline 10200-25-6, N-(2,4-Dinitrophenyl)-DL-

proline 10250-67-6, N-(2,4-Dinitrophenyl)-DL-alanine 10484-03-4,  
 N-(2,4-Dinitrophenyl)-DL-leucine 13398-26-0, L- $\alpha$ -Phenylalanine  
 17966-67-5, Benzoyl-DL-leucine 29738-09-8, D- $\alpha$ -Phenylalanine  
 37696-36-9, N-(2,4-Dinitrophenyl)-D-leucine 52893-93-9,  
 (RS)-N-(2,4-Dinitrophenyl)-1-aminoethylphosphonic acid 57357-55-8,  
 Benzoyl-D-leucine 60697-36-1 60663-16-6  
 74927-72-3, N-(3,5-Dinitrobenzoyl)-D-phenylglycine 74928-54-4,  
 N-(3,5-Dinitrobenzoyl)-DL-leucine 74928-55-5, N-(3,5-Dinitrobenzoyl)-  
 DL-phenylalanine 74958-71-7, N-(3,5-Dinitrobenzoyl)-DL-phenylglycine  
 81838-41-7, N-Benzoyl-D- $\alpha$ -phenylalanine 83037-88-1,  
 N-(3,5-Dinitrobenzoyl)-L-phenylalanine 90761-62-9,  
 N-(3,5-Dinitrobenzoyl)-L-phenylglycine 96615-25-7 96686-75-8,  
 N-Benzoyl-L- $\alpha$ -phenylalanine 98243-66-4, N-(3,5-Dinitrobenzoyl)-  
 D-leucine 120932-64-1, N-(3,5-Dinitrobenzoyl)-D-phenylalanine  
 127413-52-9, N-Benzoyl-L- $\beta$ -phenylalanine 190773-04-7,  
 N-(3,5-Dinitrobenzyloxycarbonyl)-DL-leucine 190773-05-8,  
 N-(3,5-Dinitrobenzyloxycarbonyl)-D-leucine 190773-06-9,  
 N-(3,5-Dinitrobenzyloxycarbonyl)-L-leucine 190773-07-0,  
 N-(3,5-Dinitrobenzyloxycarbonyl)-DL-phenylalanine 190773-08-1,  
 N-(3,5-Dinitrobenzyloxycarbonyl)-D-phenylalanine 190773-09-2,  
 N-(3,5-Dinitrobenzyloxycarbonyl)-L-phenylalanine 200947-52-0,  
 ( $\pm$ )-N-(3,5-Dinitrobenzoyl)- $\beta$ -aminobutyric acid 200947-83-7  
 200948-12-5, (S)-N-(3,5-Dinitrobenzoyl)- $\beta$ -aminobutyric acid  
 200948-13-6, (R)-N-(3,5-Dinitrobenzoyl)- $\beta$ -aminobutyric acid  
 200948-54-5 200948-56-7 263247-50-3, N-Benzoyl-D- $\beta$ -  
 phenylalanine 306298-73-7, N-(3,5-Dinitrobenzoyl)-DL- $\alpha$ -  
 phenylalanine 306298-74-8, N-(3,5-Dinitrobenzoyl)-D- $\alpha$ -  
 phenylalanine 306298-75-9, N-(3,5-Dinitrobenzoyl)-L- $\alpha$ -  
 phenylalanine 306298-76-0, N-(3,5-Dinitrobenzyloxycarbonyl)-DL-  
 $\alpha$ -phenylalanine 306298-77-1, N-(3,5-Dinitrobenzyloxycarbonyl)-  
 D- $\alpha$ -phenylalanine 306298-78-2, N-(3,5-  
 Dinitrobenzyloxycarbonyl)-L- $\alpha$ -phenylalanine 306298-79-3  
 , (R)-N-(2,4-Dinitrophenyl)-1-aminoethylphosphonic acid  
 306298-80-6, (S)-N-(2,4-Dinitrophenyl)-1-aminoethylphosphonic  
 acid  
 (butylcarbamoylquinine as chiral ion-pair agent in nonaq.  
 enantioselective capillary electrophoresis of N-protected amino  
 acids)

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L66 ANSWER 52 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2000:384652 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 133:20103  
 TITLE: Secondary nonaqueous electrolyte  
 batteries  
 INVENTOR(S): Tsutiyu, Hiromu; Kawakabe, Hiroshi; Wakui,  
 Atsushi; Kamata, Tomohisa; Sam, Huy  
 PATENT ASSIGNEE(S): Nippon Chemical Industrial Co., Ltd., Japan; Sony  
 Corporation  
 SOURCE: PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000033410	A1	20000608	WO 1999-JP6554	19991124
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W: CA, CN, JP, KR, NO, US				
RW: DE, FI, FR, GB, SE				
CA 2319384	A1	20000608	CA 1999-2319384	19991124
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EP 1052720	A1	20001115	EP 1999-973181	19991124
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EP 1052720	B1	20080312		
R: DE, FR, GB, SE, FI				
TW 437113	B	20010528	TW 1999-88120854	19991130
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NO 2000003869	A	20000920	NO 2000-3869	20000728
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US 6475679	B1	20021105	US 2000-601263	20000905
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PRIORITY APPLN. INFO.:			JP 1998-338346	A 19981130
			<--	
			WO 1999-JP6554	W 19991124
			<--	

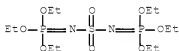
ED Entered STN: 09 Jun 2000

AB The batteries have a cathode, a Li<sup>+</sup> intercalating anode, and a nonaq. Li<sup>+</sup> electrolyte solution containing phosphazene derivs. (RO)3P:NSO3R' (R and R' are monovalent org groups) and/or (RO)3P:NSO2N:P(OR')3. R and R' are preferably C1-10 alkyl group, which may contain ether group or halogen substituents.

IT 72250-12-5 271771-13-2 271771-14-3  
 271771-15-4 271771-16-5 271771-17-6  
 271771-18-7 271771-19-8 271771-20-1  
 271771-21-2 271771-22-3 271771-23-4  
 271771-24-5 271771-25-6 271771-26-7  
 271771-27-8  
 (electrolyte solns. containing phosphazene derivs. for secondary lithium batteries)

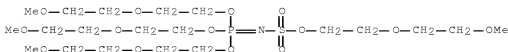
RN 72250-12-5 HCAPLUS

CN Phosphorimidic acid, sulfonylbis-, hexaethyl ester (9CI) (CA INDEX NAME)

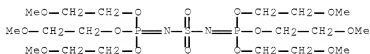


RN 271771-13-2 HCAPLUS

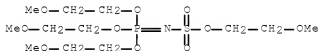
CN Sulfamic acid, N-[tris[2-(2-methoxyethoxy)ethoxy]phosphinylidene]-, 2-(2-methoxyethoxy)ethyl ester (CA INDEX NAME)



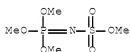
RN 271771-14-3 HCAPLUS

CN Phosphorimidic acid, sulfonylbis-, hexakis(2-methoxyethyl) ester (9CI)  
(CA INDEX NAME)

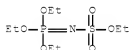
RN 271771-15-4 HCAPLUS

CN Sulfamic acid, N-[tris(2-methoxyethoxy)phosphinylidene]-,  
2-methoxyethyl ester (CA INDEX NAME)

RN 271771-16-5 HCAPLUS

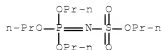
CN Sulfamic acid, N-(trimethoxyphosphinylidene)-, methyl ester (CA INDEX  
NAME)

RN 271771-17-6 HCAPLUS

CN Sulfamic acid, N-(triethoxyphosphinylidene)-, ethyl ester (CA INDEX  
NAME)

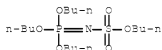
RN 271771-18-7 HCAPLUS

CN Sulfamic acid, N-(tripropoxyphosphinylidene)-, propyl ester (CA INDEX  
NAME)



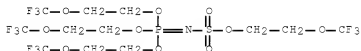
RN 271771-19-8 HCAPLUS

CN Sulfamic acid, N-(tributoxyphosphinylidene)-, butyl ester (CA INDEX NAME)



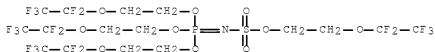
RN 271771-20-1 HCAPLUS

CN Sulfamic acid, N-[tris[2-(trifluoromethoxy)ethoxy]phosphinylidene]-, 2-(trifluoromethoxy)ethyl ester (CA INDEX NAME)



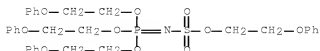
RN 271771-21-2 HCAPLUS

CN Sulfamic acid, N-[tris[2-(1,1,2,2,2-pentafluoroethoxy)ethoxy]phosphinylidene]-, 2-(1,1,2,2,2-pentafluoroethoxy)ethyl ester (CA INDEX NAME)

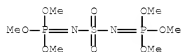


RN 271771-22-3 HCAPLUS

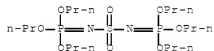
CN Sulfamic acid, N-[tris(2-phenoxyethoxy)phosphinylidene]-, 2-phenoxyethyl ester (CA INDEX NAME)



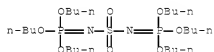
RN 271771-23-4 HCAPLUS  
 CN Phosphorimidic acid, sulfonylbis-, hexamethyl ester (9CI) (CA INDEX NAME)



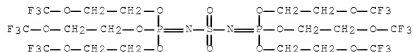
RN 271771-24-5 HCAPLUS  
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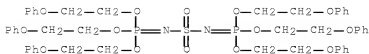
RN 271771-25-6 HCAPLUS  
 CN Phosphorimidic acid, sulfonylbis-, hexabutyl ester (9CI) (CA INDEX NAME)



RN 271771-26-7 HCAPLUS  
 CN Phosphorimidic acid, sulfonylbis-, hexakis[2-(trifluoromethoxy)ethyl] ester (9CI) (CA INDEX NAME)



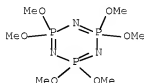
RN 271771-27-8 HCAPLUS  
 CN Phosphorimidic acid, sulfonylbis-, hexakis(2-phenoxyethyl) ester (9CI) (CA INDEX NAME)



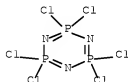
IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST secondary lithium battery electrolyte phosphazene deriv  
 IT Battery electrolytes  
 (electrolyte solns. containing phosphazene derivs. for secondary lithium batteries)  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 21324-40-3, Lithium hexafluorophosphate  
 (electrolyte solns. containing phosphazene derivs. for secondary lithium batteries)  
 IT 72250-12-5 271771-13-2 271771-14-3  
 271771-15-4 271771-16-5 271771-17-6  
 271771-18-7 271771-19-8 271771-20-1  
 271771-21-2 271771-22-3 271771-23-4  
 271771-24-5 271771-25-6 271771-26-7  
 271771-27-8  
 (electrolyte solns. containing phosphazene derivs. for secondary lithium batteries)  
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 53 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2000:71269 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 132:110532  
 TITLE: A novel flame-retardant additive for lithium batteries  
 AUTHOR(S): Lee, Chang Woo; Venkatachalapathy, Rajeev; Prakash, Jai  
 CORPORATE SOURCE: Center for Electrochemical Science and Engineering, Department of Chemical and Environmental Engineering, Illinois Institute of Technology, Chicago, IL, 60616, USA  
 SOURCE: Electrochemical and Solid-State Letters (2000), 3(2), 63-65  
 CODEN: ESLEF6; ISSN: 1099-0062  
 PUBLISHER: Electrochemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 30 Jan 2000  
 AB The electrochem. and thermal properties of nonaq. electrolytes containing a flame retardant additive hexamethoxycyclotriphosphazene ([NP(OCH<sub>3</sub>)<sub>2</sub>]<sub>3</sub>) were measured using cyclic voltammetry, electrochem. cycling, differential scanning calorimetry, and accelerating rate calorimetry. The flame retardant additive was synthesized by reacting sodium methoxide (NaOCH<sub>3</sub>) and hexachlorocyclotriphosphazene (NPCl<sub>2</sub>)<sub>3</sub>. The electrochem. stability of the electrolyte was determined using cyclic voltammetry. A mixture of 1 M lithium hexafluorophosphate and ethylene carbonate-dimethyl carbonate (50:50 wt %) was used as electrolyte. Li/LiNi<sub>0.8</sub>Co<sub>0.2</sub>O<sub>2</sub> cells were fabricated with and without the flame retardant additive to study their electrochem. performance.

IT 957-13-1, Hexamethoxycyclotriphosphazene  
 (flame retardant additive for lithium secondary batteries)  
 RN 957-13-1 HCAPLUS  
 CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine  
 1, 3, 5, 2, 4, 6-Triazatriphosphorine, 2, 2, 4, 4, 6, 6-hexamethoxy- (CA INDEX NAME)



IT 940-71-6, Hexachlorocyclotriphosphazene  
 (flame retardant additive for lithium secondary batteries)  
 RN 940-71-6 HCAPLUS  
 CN 2λ5, 4λ5, 6λ5-1, 3, 5, 2, 4, 6-Triazatriphosphorine,  
 2, 2, 4, 4, 6, 6-hexachloro- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 59  
 IT 957-13-1, Hexamethoxycyclotriphosphazene  
 (flame retardant additive for lithium secondary batteries)  
 IT 124-41-4, Sodium methoxide 940-71-6,  
 Hexachlorocyclotriphosphazene  
 (flame retardant additive for lithium secondary batteries)  
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 54 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2000:49109 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 132:110582  
 TITLE: Nonaqueous secondary batteries  
 INVENTOR(S): Tomiyama, Hideki  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000021449	A	20000121	JP 1998-186328	19980701
JP 4003298	B2	20071107	<--	
PRIORITY APPLN. INFO.:			JP 1998-186328	19980701
			<--	

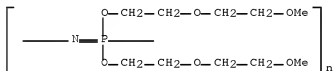
ED Entered STN: 21 Jan 2000

AB The batteries comprise a Li-containing transition metal oxide cathode, a Li-intercalating Si-containing anode, and a electrolyte gel containing (a) organic polymer, (b) non-protonic solvent, and (c) ammonium, alkali metal, or alkaline earth metal salt. The batteries have excellent charge-discharge cycle characteristics.

IT 98973-15-0 255897-46-2  
(lithium secondary batteries with polymer gel electrolytes)

RN 98973-15-0 HCAPLUS

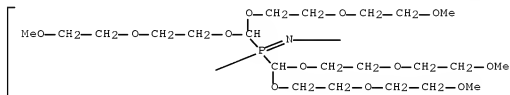
CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



RN 255897-46-2 HCAPLUS

CN Poly[nitrilo[bis[bis[2-(2-methoxyethoxy)ethoxy)methyl]phosphoranylidyne]] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



- IC ICM H01M010-40  
ICS H01M010-40; H01M004-02; H01M004-58
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST nonaq secondary battery gel electrolyte;  
oxyalkylene vinyl polymer gel electrolyte battery
- IT Gels  
(electrolyte; lithium secondary batteries with polymer gel electrolytes)
- IT Battery electrolytes  
Polymer electrolytes  
Secondary batteries  
(lithium secondary batteries with polymer gel electrolytes)
- IT Fluoropolymers, uses  
Polyoxyalkylenes, uses  
(lithium secondary batteries with polymer gel electrolytes)
- IT Polyphosphazenes  
Polyphosphazenes  
Polysiloxanes, uses  
Polysiloxanes, uses  
(polyoxyalkylene-, graft, lithium complex; lithium secondary batteries with polymer gel electrolytes)
- IT Polyoxyalkylenes, uses  
Polyoxyalkylenes, uses  
(polyphosphazene-, graft, lithium complex; lithium secondary batteries with polymer gel electrolytes)
- IT Polyoxyalkylenes, uses  
Polyoxyalkylenes, uses  
(polysiloxane-, graft, lithium complex; lithium secondary batteries with polymer gel electrolytes)
- IT 7440-02-0, Nickel, uses  
(-coated silicon anode; lithium secondary batteries with polymer gel electrolytes)
- IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 193072-79-6  
(anode; lithium secondary batteries with polymer gel electrolytes)
- IT 12190-79-3, Cobalt lithium oxide (CoLiO2)  
(cathode; lithium secondary batteries with polymer gel electrolytes)
- IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate  
(electrolyte solvent; lithium secondary batteries with polymer gel electrolytes)
- IT 21324-40-3, Lithium hexafluorophosphate  
(electrolyte; lithium secondary batteries with polymer gel electrolytes)
- IT 9003-11-6, Ethylene oxide-propylene oxide copolymer 9011-17-0  
24937-79-9, Poly(vinylidene fluoride) 24968-79-4,  
Acrylonitrile-methyl acrylate copolymer 25014-41-9,  
Polyacrylonitrile 25067-61-2, Polymethacrylonitrile 25322-68-3  
25322-69-4 29613-70-5 50867-60-2, Acrylonitrile-methyl vinyl ether  
copolymer 98973-15-8 115401-75-7 255897-37-1  
255897-39-3 255897-40-6 255897-42-8 255897-44-0 255897-45-1  
255897-46-2 255897-47-3 255897-48-4  
(lithium secondary batteries with polymer gel electrolytes)

L66 ANSWER 55 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1999:756801 HCAPLUS Full-text  
 DOCUMENT NUMBER: 132:4794  
 TITLE: Nonaqueous-electrolyte  
 secondary lithium batteries  
 INVENTOR(S): Hara, Kenji; Maejima, Toshikazu; Tanaka, Nobukazu  
 PATENT ASSIGNEE(S): Shin-Kobe Electric Machinery Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11329444	A	19991130	JP 1998-138985	19980520
			<--	
PRIORITY APPLN. INFO.:			JP 1998-138985	19980520
			<--	

ED Entered STN: 30 Nov 1999  
 AB The battery, using cathode from Li- and Mn-containing mixed oxide, contains ammonium phosphate, ammonium polyphosphate, and/or their compds. in the anode or cathode. The battery prevents elution of Mn ion at high temperature  
 IT 10124-31-9, Ammonium phosphate  
 (ammonium (poly)phosphate in electrode of secondary battery using cathode from Li- and Mn-containing mixed oxide)  
 RN 10124-31-9 HCAPLUS  
 CN Phosphoric acid, ammonium salt (1:?) (CA INDEX NAME)



●x NH3

IC ICM H01M004-62  
 ICS H01M004-02; H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 IT 10124-31-9, Ammonium phosphate  
 (ammonium (poly)phosphate in electrode of secondary battery using cathode from Li- and Mn-containing mixed oxide)

L66 ANSWER 56 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1999:361938 HCAPLUS Full-text  
 DOCUMENT NUMBER: 131:7543  
 TITLE: Secondary nonaqueous electrolyte  
 batteries  
 INVENTOR(S): Maeda, Kenichi; Maijima, Toshikazu; Tanaka, Nobukazu

PATENT ASSIGNEE(S): Shin-Kobe Electric Machinery Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 11154535	A	19990608	JP 1997-319715	19971120
			<--	
PRIORITY APPLN. INFO.:			JP 1997-319715	19971120
			<--	

ED Entered STN: 14 Jun 1999  
 AB The batteries, using Li intercalating electrodes and Li salt electrolyte solns., contain ammonium phosphate, ammonium polyphosphate, or their compds. in their cathodes and/or anodes.  
 IT 7722-76-1, Ammonium dihydrogen phosphate 7783-28-0, Diammonium hydrogen phosphate 10361-65-6, Triammonium phosphate  
 (electrodes containing ammonium phosphate and polyphosphate and their compds. for secondary lithium batteries)  
 RN 7722-76-1 HCAPLUS  
 CN Phosphoric acid, ammonium salt (1:1) (CA INDEX NAME)



● NH<sub>3</sub>

RN 7783-28-0 HCAPLUS  
 CN Phosphoric acid, ammonium salt (1:2) (CA INDEX NAME)



●<sub>2</sub> NH<sub>3</sub>

RN 10361-65-6 HCAPLUS  
 CN Phosphoric acid, ammonium salt (1:3) (CA INDEX NAME)



● 3 NH<sub>3</sub>

IC ICM H01M010-40  
ICS H01M004-02; H01M004-62  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
IT 7722-76-1, Ammonium dihydrogen phosphate 7783-28-0, Diammonium hydrogen phosphate 10361-65-6, Triammonium phosphate  
(electrodes containing ammonium phosphate and polyphosphate and their compds. for secondary lithium batteries)

L66 ANSWER 57 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1999:222821 HCAPLUS Full-text  
DOCUMENT NUMBER: 130:225401  
TITLE: Process for producing electrode of nonaqueous electrolyte battery  
INVENTOR(S): Okada, Mikio; Hasumi, Takeshi; Yasuda, Hideo  
PATENT ASSIGNEE(S): Japan Storage Battery Company Limited, Japan  
SOURCE: Eur. Pat. Appl., 15 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 905804	A2	19990331	EP 1998-114939	19980807
			<--	
EP 905804	A3	19991208		
			R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO	
JP 11067191	A	19990309	JP 1997-227257	19970808
			<--	
JP 11067192	A	19990309	JP 1997-227258	19970808
			<--	
JP 11149942	A	19990602	JP 1997-335044	19971118
			<--	
PRIORITY APPLN. INFO.:			JP 1997-227257	A 19970808
			<--	
			JP 1997-227258	A 19970808
			<--	
			JP 1997-335044	A 19971118
			<--	

ED Entered STN: 12 Apr 1999

AB In a process for producing an electrode of a nonaq. electrolyte battery, an electrode and a polymer paste are prepared. The electrode is made of a metal as a current collector and an active material layer thereon. The polymer paste has a polymer dissolved in a solvent soluble in water. The polymer

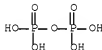
paste is allowed to be held in the electrode. Thereafter, the solvent is extracted from the polymer paste with an aqueous solution containing an alc. (1-70%), phosphorous or phosphorous compd (phosphoric acid or phosphate at  $1 \times 10^{-7}$  to 1M). The primary alc. is MeOH or EtOH and the metallic current collector is Al or Cu.

IT 13597-86-9, Pyrophosphoric acid, diammonium salt  
158115-20-9

(solvent extraction by; process for producing electrode of nonaq  
. electrolyte battery)

RN 13597-86-9 HCAPLUS

CN Diphosphoric acid, ammonium salt (1:2) (CA INDEX NAME)



● 2 NH<sub>3</sub>

RN 158115-20-9 HCAPLUS

CN Hypophosphoric acid, compd. with hydrazine (9CI) (CA INDEX NAME)

CM 1

CRN 7803-60-3

CMF H4 O6 P2



CM 2

CRN 302-01-2

CMF H4 N2

H<sub>2</sub>N-NH<sub>2</sub>

IT 7722-76-1, Ammonium dihydrogen phosphate 7783-28-0,  
DiAmmonium hydrogen phosphate 15823-35-5

(solvent extraction by; process for producing electrode of nonaq  
. electrolyte battery)

RN 7722-76-1 HCAPLUS

CN Phosphoric acid, ammonium salt (1:1) (CA INDEX NAME)



RN 7783-28-0 HCAPLUS  
 CN Phosphoric acid, ammonium salt (1:2) (CA INDEX NAME)



RN 15823-35-5 HCAPLUS  
 CN Hydrazine, phosphate (1:1) (CA INDEX NAME)

CM 1

CRN 7664-38-2  
 CMF H3 O4 P



CM 2

CRN 302-01-2  
 CMF H4 N2



IC ICM H01M004-02  
 ICS H01M010-40

- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST electrode manuf nonaq electrolyte battery
- IT Secondary batteries  
(lithium; process for producing electrode of nonaq. electrolyte battery)
- IT Battery anodes
- Battery cathodes  
(process for producing electrode of nonaq. electrolyte battery)
- IT Carbon black, uses  
(process for producing electrode of nonaq. electrolyte battery)
- IT Fluoropolymers, uses  
(process for producing electrode of nonaq. electrolyte battery)
- IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses  
(current collector; process for producing electrode of nonaq. electrolyte battery)
- IT 12190-79-3, Cobalt lithium oxide colio2  
(process for producing electrode of nonaq. electrolyte battery)
- IT 7722-88-5  
(process for producing electrode of nonaq. electrolyte battery)
- IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 872-50-4, Nmp, uses 24937-79-9, PvdF  
(process for producing electrode of nonaq. electrolyte battery)
- IT 1327-47-5, Metaphosphoric acid, ammonium salt 2466-09-3, Pyrophosphoric acid 7320-34-5, Pyrophosphoric acid, tetrapotassium salt 7758-16-9, Pyrophosphoric acid, disodium salt 7782-95-8, Hypophosphoric acid, disodium salt 10402-25-2, Iron pyrophosphate 13597-86-9, Pyrophosphoric acid, diammonium salt 13721-43-2, Hypophosphoric acid, tetrasodium salt 14691-79-3, Hypophosphoric acid, trisodium salt 14691-84-0, Pyrophosphoric acid, dipotassium salt 39692-18-7 56484-10-7 356115-20-9  
(solvent extraction by; process for producing electrode of nonaq. electrolyte battery)
- IT 512-56-1, Trimethyl orthophosphate 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate 7664-38-2, Phosphoric acid, uses 7723-14-0D, Ammonium dihydrogen phosphate 7723-14-0D, Phosphorus, compds., uses 7757-86-0, Magnesium hydrogen phosphate 7757-87-1 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate 7758-87-4, Tricalcium phosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 7783-28-0, DiAmmonium hydrogen phosphate 7785-21-9, Ammonium magnesium phosphate 7785-84-4, Trisodium metaphosphate 10343-62-1, Metaphosphoric acid 10377-52-3, Lithium phosphate 13011-54-6, Ammonium sodium hydrogen phosphate 13453-80-0, Lithium dihydrogen phosphate 13530-50-2, Aluminum dihydrogen phosphate 15823-35-5 18266-28-9 18718-07-5 25513-23-9 33689-84-8, Triphosphoric acid, disodium salt  
(solvent extraction by; process for producing electrode of nonaq. electrolyte battery)



TITLE: Secondary nonaqueous electrolyte batteries  
 INVENTOR(S): Takami, Norio; Ohsaki, Takahisa  
 PATENT ASSIGNEE(S): Toshiba Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11086905	A	19990330	JP 1997-248294	19970912
			<--	
JP 4053630	B2	20080227		
JP 2007242631	A	20070920	JP 2007-128290	20070514
			<--	
PRIORITY APPLN. INFO.:			JP 1997-248294	A3 19970912
			<--	

ED Entered STN: 05 Apr 1999

AB The batteries have a cathode, a Li intercalating carbonaceous anode, and an electrolyte containing a molten salt having an organic ammonium cation and a B, P, or S containing fluoride anion. Another type of the batteries have a cathode using an Al, stainless steel, or Ni collector, an anode, and an electrolyte containing a molten salt having Li cation and the above described anion. The electrolyte may be a solid electrolyte containing the salt and a polymer.

IT 221201-01-0

(compos. of electrolytes for secondary lithium batteries)

RN 221201-01-0 HCAPLUS

CN Ethanamine, N-methoxy-N,N-dimethyl-, hexafluorophosphate(1-) (1:1)  
 (CA INDEX NAME)

CM 1

CRN 221201-00-9

CMF C5 H14 N O



CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IC ICM H01M010-40  
 ICS H01M010-40; H01M004-58; H01M004-64  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST secondary lithium battery electrolyte; ammonium salt lithium battery electrolyte  
 IT Battery electrolytes  
 (comps. of electrolytes for secondary lithium batteries)  
 IT 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate 132404-42-3 143314-16-3 199658-41-8 221201-01-0  
 (comps. of electrolytes for secondary lithium batteries)  
 IT 25014-41-9, Polyacrylonitrile  
 (comps. of polymer electrolytes for secondary lithium batteries)

L66 ANSWER 59 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:163137 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 130:239955  
 TITLE: Method for producing anode of non-aqueous electrolytic battery and method for producing non-aqueous electrolytic battery

INVENTOR(S): Okada, Mikio; Hazumi, Takeshi; Yasuda, Hideo

PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11067192	A	19990309	JP 1997-227258	19970808
			<--	
CN 1209659	A	19990303	CN 1998-103549	19980807
			<--	
EP 905804	A2	19990331	EP 1998-114939	19980807
			<--	
EP 905804	A3	19991208		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				
PT, IE, SI, LT, LV, FI, RO				
US 6676713	B1	20040113	US 1998-131675	19980810
			<--	
PRIORITY APPLN. INFO.:			JP 1997-227257	A 19970808
			<--	
			JP 1997-227258	A 19970808
			<--	

ED Entered STN: 12 Mar 1999

AB This anode comprises Cu as a collector and containing a polymer-containing mixed liquid and is treated with water containing P or a P compound. The P compound may be phosphoric acids. A non-aqueous electrolytic battery is provided with the anode. Even in the case the anode is immersed in water for forming evenly spherical pores in the polymer, deterioration of the performance of the anode due to corrosion of Cu collector by water can effectively be prevented by the treatment with P or a P compound. By using economical water, anode manufacturing cost is lowered.

IT 7722-76-1, Ammonium dihydrogenphosphate 7723-28-0

13765-35-0, Ammonium pyrophosphate 15823-35-5,

Hydrazinium dihydrogenphosphate 54390-90-8, Ammonium

hypophosphate 221354-70-7 221354-72-9

(anode treated with; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)

RN 7722-76-1 HCAPLUS

CN Phosphoric acid, ammonium salt (1:1) (CA INDEX NAME)

● NH<sub>3</sub>

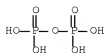
RN 7783-28-0 HCAPLUS

CN Phosphoric acid, ammonium salt (1:2) (CA INDEX NAME)

●<sub>2</sub> NH<sub>3</sub>

RN 13765-35-0 HCAPLUS

CN Diphosphoric acid, ammonium salt (1:4) (CA INDEX NAME)

●4 NH<sub>3</sub>

RN 15823-35-5 HCAPLUS  
 CN Hydrazine, phosphate (1:1) (CA INDEX NAME)

CM 1

CRN 7664-38-2  
 CMF H3 O4 P



CM 2

CRN 302-01-2  
 CMF H4 N2



RN 54390-90-8 HCAPLUS  
 CN Hypophosphoric acid, ammonium salt (1:?) (CA INDEX NAME)

●x NH<sub>3</sub>

RN 221354-70-7 HCAPLUS  
 CN Hypophosphoric acid, compd. with hydrazine (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 7803-60-3

CMF H4 O6 P2



CM 2

CRN 302-01-2

CMF H4 N2



RN 221354-72-9 HCAPLUS

CN Hypophosphoric acid, compd. with hydrazine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 7803-60-3

CMF H4 O6 P2



CM 2

CRN 302-01-2

CMF H4 N2



IC ICM H01M004-04

ICS H01M004-62; H01M004-66; H01M006-14; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy

- Technology)
- IT Phosphates, uses  
(anode treated with; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)
- IT Fluoropolymers, uses  
(cathode containing; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)
- IT Primary batteries  
(non-aqueous electrolytic type; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)
- IT Battery anodes  
(of non-aqueous electrolytic battery; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)
- IT 512-56-1 2466-09-3, Pyrophosphoric acid 7320-34-5, Potassium pyrophosphate 7558-79-4, Disodium hydrogenphosphate 7558-80-7, Sodium dihydrogenphosphate 7601-54-9, Sodium phosphate 7664-38-2, Phosphoric acid, uses 7722-76-1, Ammonium dihydrogenphosphate 7722-88-5 7757-86-0, Magnesium hydrogenphosphate 7757-87-1 7758-11-4, Dipotassium hydrogenphosphate 7758-16-9 7758-23-8, Calcium dihydrogenphosphate 7758-29-4, Sodium tripolyphosphate 7758-87-4, Calcium phosphate 7778-53-2, Potassium phosphate 7778-77-0, Potassium dihydrogenphosphate 7782-95-8, Sodium dihydrogenhypophosphate 7783-26-0 7785-21-9, Ammonium magnesium phosphate 7785-84-4, Sodium trimetaphosphate 10058-44-3, Ferric pyrophosphate 10343-62-1, Metaphosphoric acid 10377-52-3, Lithium phosphate 12185-10-3, Yellow phosphorus, uses 12357-31-2, Sodium fluoride phosphate (Na4F(PO4)) 13011-54-6, Ammonium sodium hydrogenphosphate 13092-66-5, Magnesium dihydrogenphosphate 13446-44-1, Manganese dihydrogenpyrophosphate 13453-80-0, Lithium dihydrogenphosphate 13530-50-2, Aluminum dihydrogenphosphate 13721-43-2, Tetrasodium hypophosphate 13765-35-0, Ammonium pyrophosphate 14691-79-3, Trisodium hypophosphate 14691-84-0, Dipotassium pyrophosphate 15823-35-5, Hydrazinium dihydrogenphosphate 18266-28-9 18718-07-5, Manganese phosphate Mn(H2PO4)2 54390-90-8, Ammonium hypophosphate 183896-43-7 221354-68-3 221354-70-7 221354-72-9  
(anode treated with; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)
- IT 24937-79-9, Poly(vinylidene fluoride)  
(cathode containing; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)
- IT 7440-50-8, Copper, uses  
(collector of cathode; battery anode comprising copper collector with high corrosion resistance and non-aqueous electrolytic battery comprising the anode)

L66 ANSWER 60 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1999:163136 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 130:239954  
 TITLE: Method for producing cathode of non-aqueous electrolytic battery and

method for producing non-aqueous  
electrolytic battery comprising the  
cathode

INVENTOR(S): Okada, Mikio; Hazumi, Takeshi; Yasuda, Hideo  
PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11067191	A	19990309	JP 1997-227257	19970808
			<--	
CN 1209659	A	19990303	CN 1998-103549	19980807
			<--	
EP 905804	A2	19990331	EP 1998-114939	19980807
			<--	
EP 905804	A3	19991208		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				
PT, IE, SI, LT, LV, FI, RO				
US 6676713	B1	20040113	US 1998-131675	19980810
			<--	
PRIORITY APPLN. INFO.:			JP 1997-227257	A 19970808
			<--	
			JP 1997-227258	A 19970808
			<--	
			JP 1997-335044	A 19971118
			<--	
ED Entered STN: 12 Mar 1999				
AB This cathode comprises an Al collector and a polymer-containing mixed liquid and is treated with water containing P or a P compound. The P compound may be phosphoric acids. A non-aqueous electrolytic battery is provided with the obtained cathode. Even in the case the cathode is immersed in water for forming evenly spherical pores in the polymer of the cathode, deterioration of the performance of the cathode due to corrosion of Al by water can effectively be prevented. By using economical water, cathode manufacturing cost is lowered.				
IT 7722-76-1, Ammonium dihydrogenphosphate 7783-28-0 13765-35-0, Ammonium pyrophosphate 15823-35-5, Hydrazinium dihydrogenphosphate 54390-98-8, Ammonium hypophosphate 221354-78-7 221354-72-9 (cathode treated with; battery cathode comprising aluminum collector with high corrosion resistance and non- aqueous electrolytic battery comprising the cathode)				
RN 7722-76-1 HCAPLUS				
CN Phosphoric acid, ammonium salt (1:1) (CA INDEX NAME)				



● NH<sub>3</sub>

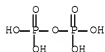
RN 7783-28-0 HCAPLUS

CN Phosphoric acid, ammonium salt (1:2) (CA INDEX NAME)

●2 NH<sub>3</sub>

RN 13765-35-0 HCAPLUS

CN Diphosphoric acid, ammonium salt (1:4) (CA INDEX NAME)

●4 NH<sub>3</sub>

RN 15823-35-5 HCAPLUS

CN Hydrazine, phosphate (1:1) (CA INDEX NAME)

CM 1

CRN 7664-38-2

CMF H3 O4 P



CM 2

CRN 302-01-2

CMF H4 N2

H<sub>2</sub>N—NH<sub>2</sub>



RN 54390-90-8 HCAPLUS

CN Hypophosphoric acid, ammonium salt (1:?) (CA INDEX NAME)



RN 221354-70-7 HCAPLUS

CN Hypophosphoric acid, compd. with hydrazine (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 7803-60-3

CMF H4 O6 P2



CM 2

CRN 302-01-2

CMF H4 N2



RN 221354-72-9 HCAPLUS

CN Hypophosphoric acid, compd. with hydrazine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 7803-60-3

CMF H4 O6 P2



CM 2

CRN 302-01-2

CMF H4 N2

 $\text{H}_2\text{N}-\text{NH}_2$ 

- IC ICM H01M004-04  
ICS H01M004-62; H01M004-66; H01M006-16; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- IT Fluoropolymers, uses  
(cathode containing; battery cathode comprising aluminum collector with high corrosion resistance and non-aqueous electrolytic battery comprising the cathode)
- IT Phosphates, uses  
(cathode treated with; battery cathode comprising aluminum collector with high corrosion resistance and non-aqueous electrolytic battery comprising the cathode)
- IT Primary batteries  
(non-aqueous electrolytic type; battery cathode comprising aluminum collector with high corrosion resistance and non-aqueous electrolytic battery comprising the cathode)
- IT Battery cathodes  
(of non-aqueous electrolytic battery; battery cathode comprising aluminum collector with high corrosion resistance and non-aqueous electrolytic battery comprising the cathode)
- IT 24937-79-9, Poly(vinylidene fluoride)  
(cathode containing; battery cathode comprising aluminum collector with high corrosion resistance and non-aqueous electrolytic battery comprising the cathode)
- IT 512-56-1 2466-09-3, Pyrophosphoric acid 7320-34-5, Potassium pyrophosphate 7558-79-4, Disodium hydrogenphosphate 7558-80-7, Sodium dihydrogenphosphate 7601-54-9, Sodium phosphate 7664-38-2, Phosphoric acid, uses 7722-76-1, Ammonium dihydrogenphosphate 7722-88-5 7757-86-0, Magnesium hydrogenphosphate 7757-87-1, Trimagnesium diphosphate 7758-11-4, Dipotassium hydrogenphosphate 7758-16-9 7758-23-8, Calcium dihydrogenphosphate 7758-29-4, Sodium tripolyphosphate 7758-87-4, Calcium phosphate 7778-53-2, Potassium phosphate 7778-77-0, Potassium dihydrogenphosphate 7782-95-8, Sodium dihydrogenphosphate 7783-28-0 7785-21-9, Ammonium magnesium phosphate 7785-84-4, Sodium trimetaphosphate 10343-62-1, Metaphosphoric acid 10377-52-3, Lithium phosphate 10402-25-2, Iron

pyrophosphate 12185-10-3, Yellow phosphorus, uses 12357-31-2,  
 Sodium fluoride phosphate (Na4F(PO4)) 13011-54-6, Ammonium sodium  
 hydrogenphosphate 13092-66-5, Magnesium dihydrogenphosphate  
 13446-44-1, Manganous pyrophosphate 13453-80-0, Lithium  
 dihydrogenphosphate 13530-50-2, Aluminum dihydrogenphosphate  
 13721-43-2, Tetrasodium hypophosphate 13765-35-0, Ammonium  
 pyrophosphate 14691-79-3, Trisodium hypophosphate 14691-84-0,  
 Dipotassium pyrophosphate 15823-35-5, Hydrazinium  
 dihydrogenphosphate 18266-28-9 18718-07-5 54390-90-3,  
 Ammonium hypophosphate 183896-43-7 221354-68-3 221354-70-7  
 221354-72-9

(cathode treated with; battery cathode comprising aluminum  
 collector with high corrosion resistance and non-  
 aqueous electrolytic battery comprising the cathode)

IT 7429-90-5, Aluminum, uses

(collector of cathode; battery cathode comprising aluminum  
 collector with high corrosion resistance and non-  
 aqueous electrolytic battery comprising the cathode)

L66 ANSWER 61 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:629832 HCAPLUS Full-text

DOCUMENT NUMBER: 129:247637

ORIGINAL REFERENCE NO.: 129:50371a,50374a

TITLE: Secondary nonaqueous electrolyte

batteries containing phosphate esters

INVENTOR(S): Mitsufuji, Yasuhiko; Murata, Toshihide; Ito,  
 Shuji; Toyoguchi, Yoshinori

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 10255839	A	19980925	JP 1997-57982	19970312
			<--	
PRIORITY APPLN. INFO.:			JP 1997-57982	19970312
			<--	

ED Entered STN: 06 Oct 1998

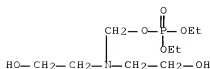
AB The batteries use electrolyte solns. containing phosphate esters, halogen  
 containing phosphate esters, and/or condensed phosphate esters; anode active  
 mass containing polyphosphate salts; or cathode active mass containing  
 alkaline earth hydroxide, Sb oxide, borates, metaborates, ZrO<sub>2</sub>, metal or  
 metalloid polyphosphate salts, and/or Ab containing polyphosphate salts.

IT 15351-25-4, Diethyl-N,N-bis(2-hydroxyethyl)amino methyl  
 phosphate

(phosphate ester additives for electrolytes in secondary  
 lithium batteries)

RN 15351-25-4 HCAPLUS

CN Phosphoric acid, [bis(2-hydroxyethyl)amino]methyl diethyl ester (CA  
 INDEX NAME)



- IC ICM H01M010-40  
ICS H01M010-40; H01M004-02
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST secondary lithium battery phosphate additive; electrolyte secondary lithium battery phosphate additive; anode secondary lithium battery phosphate additive; cathode additive secondary lithium battery
- IT Battery electrolytes  
Secondary batteries  
(phosphate ester additives for electrolytes in secondary lithium batteries)
- IT 96-49-1, Ethylene carbonate 110-71-4 7791-03-9, Lithium perchlorate  
(phosphate ester additives for electrolytes in secondary lithium batteries)
- IT 1309-42-8, Magnesium hydroxide 1314-23-4, Zirconia, uses 1314-60-9, Antimony oxide (Sb2O5) 1332-07-6, Zinc borate 13701-59-2, Barium metaborate  
(phosphate ester additives for electrolytes in secondary lithium batteries)
- IT 115-86-6, Triphenyl phosphate 115-96-8, Tris(chloroethyl) phosphate 1241-94-7, 2-Ethylhexyl diphenyl phosphate 1330-78-5, Tricresyl phosphate 1623-19-4, Triallyl phosphate 6145-73-9, Tris( $\beta$ -chloropropyl) phosphate 7664-38-2D, Phosphoric acid, condensed with aromatic compds., esters, uses 7664-38-2D, Phosphoric acid, condensed, halogen containing, esters, uses 15351-25-4, Diethyl-N,N-bis(2-hydroxyethyl)amino methyl phosphate 19186-97-1, Tris(tribromoneopentyl)phosphate 25155-23-1, Trixylenyl phosphate 26444-49-5, Cresyl diphenyl phosphate 26604-51-3, Tris(dichloropropyl) phosphate 29660-68-2, Xylenyl diphenyl phosphate 31830-27-0, Tris(tribromophenyl) phosphate  
(phosphate ester additives for electrolytes in secondary lithium batteries)

L66 ANSWER 62 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1998:479138 HCAPLUS Full-text  
DOCUMENT NUMBER: 129:124883  
ORIGINAL REFERENCE NO.: 129:25523a, 25526a  
TITLE: Nonaqueous electrolyte solutions and secondary nonaqueous electrolyte batteries  
INVENTOR(S): Hinohara, Akio; Omi, Katsuhiko  
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10189039	A	19980721	JP 1996-346239	19961225
PRIORITY APPLN. INFO.:			JP 1996-346239	19961225

OTHER SOURCE(S): MARPAT 129:124883

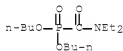
ED Entered STN: 03 Aug 1998

AB The electrolyte solns. use nonaq. solvents containing phosphate esters ROPO(OR1)OR2, where R, R1, and R2 are carbonyl group containing groups or C1-4 alkoxy groups with  $\geq 1$  of R, R2, and R2 being carbonyl group containing groups. The carbonyl group containing group is CO2R3, CH2CO2R4, or CONR3R4, where R3 and R4 are C1-4 alkyl groups. The electrolyte is preferably LiPF6. The batteries using the electrolyte solns. are secondary Li batteries using Li, Li alloy, or Li intercalating carbonaceous anodes and Li transition metal oxide cathodes. The use of the phosphate esters prevents the batteries from catching fire.

IT 7439-69-2, Dibutyl N,N-diethylcarbamyolphosphonate  
(nonaq. electrolyte solns. containing phosphate esters in secondary lithium batteries for safety)

RN 7439-69-2 HCAPLUS

CN Phosphonic acid, [(diethylamino)carbonyl]-, dibutyl ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery electrolyte phosphate ester; lithium battery electrolyte solvent phosphate ester; safety secondary lithium battery phosphate ester; fire prevention lithium battery phosphate ester

IT Battery electrolytes  
Safety  
(nonaq. electrolyte solns. containing phosphate esters in secondary lithium batteries for safety)

IT 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 5927-18-4, Trimethyl phosphonoacetate 7439-69-2, Dibutyl N,N-diethylcarbamyolphosphonate 21324-40-3, Lithium hexafluorophosphate 31142-23-1, Trimethyl phosphonoformate  
(nonaq. electrolyte solns. containing phosphate esters in secondary lithium batteries for safety)

L66 ANSWER 63 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:30979 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 114:30979

ORIGINAL REFERENCE NO.: 114:5322h,5323a

TITLE: Thermochemical characteristics of solvation of ions in mixtures of water with formamide, dimethylsulfoxide and hexamethylphosphoric triamide

AUTHOR(S): Vandyshev, V. N.; Korolev, V. P.; Krestov, G. A.  
 CORPORATE SOURCE: Inst. Non-Aqueous Solut. Chem., Ivanovo, 153045, USSR  
 SOURCE: Thermochemica Acta (1990), 169, 57-67  
 CODEN: THACAS; ISSN: 0040-6031  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 26 Jan 1991  
 AB The heats of solution of n-C7H16, n-C10H22, n-C14H30, and n-C18H38 in hexamethylphosphoric triamide (HMPA), acetonitrile and also of LiNO3, NaNO3, KNO3, CsNO3, NH4NO3, and NaBPh4 in formamide (FA), dimethylsulfoxide (DMSO), HMPA, and their mixts. with water at 298.15 K were measured by a calorimetric method. The enthalpic characteristics of transfer of individual ions are calculated. The approach based on the quant. evaluation of sep. contributions to the enthalpy of ion transfer is used for this purpose. The equations testifying to the donor-acceptor nature of ion-solvent interactions are revealed. On these bases the results of the thermochem. investigations on solns. of electrolytes in mixed water-organic solvents are discussed.  
 IT 680-31-9, Hexamethylphosphoric triamide, properties  
 (heats of solution and solvation and of transfer in, of alkanes and various electrolytes)  
 RN 680-31-9 HCAPLUS  
 CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



CC 69-2 (Thermodynamics, Thermochemistry, and Thermal Properties)  
 Section cross-reference(s): 68  
 ST solvation thermodyn ion aq mixt; soln heat alkane amide;  
 electrolyte soln heat transfer  
 IT Ions in liquids  
 (heat of transfer of, from propylcarbonate to non  
 aqueous solvent)  
 IT Alkanes, properties  
 (heats of solution and of solvation of transfer of, in various  
 nonaq. solvents)  
 IT Heat of transfer and Heat of transport  
 (of alkanes and alkali ions and alkali salts, to non  
 aqueous solvents)  
 IT 108-32-7, Propylene carbonate  
 (heat of transfer of ions from, to nonaq. solvents)  
 IT 51-92-3, Tetramethylammonium 10549-76-5, Tetrabutylammonium  
 16887-00-6, Chloride, properties 17341-24-1, Lithium ion(1+),  
 properties 17341-25-2, Sodium ion(1+), properties 18459-37-5,  
 Cesium ion(1+), properties 20461-54-5, Iodide, properties  
 24203-36-9, Potassium ion(1+), properties 24959-67-9, Bromide,  
 properties  
 (heat of transfer of, from propylcarbonate to non  
 aqueous solvent)  
 IT 75-05-8, Acetonitrile, properties 680-31-9,  
 Hexamethylphosphoric triamide, properties  
 (heats of solution and solvation and of transfer in, of alkanes and  
 various electrolytes)

L66 ANSWER 64 OF 64 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1986:487537 HCAPLUS Full-text  
 DOCUMENT NUMBER: 105:87537  
 ORIGINAL REFERENCE NO.: 105:14047a,14050a  
 TITLE: Means and method for reducing carbon dioxide to provide an oxalate product  
 INVENTOR(S): Ang, Peter G. P.; Sammelis, Anthony F.; Morduchowitz, Abraham  
 PATENT ASSIGNEE(S): Texaco Inc. , USA  
 SOURCE: U.S., 5 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----		-----	-----	-----
US 4595465	A	19860617	US 1984-686161	19841224
			<--	
PRIORITY APPLN. INFO.:			US 1984-686161	19841224
			<--	

OTHER SOURCE(S): MARPAT 105:87537

ED Entered STN: 06 Sep 1986

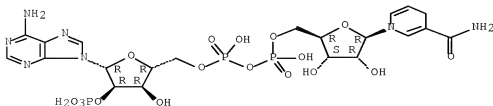
AB A process and apparatus for converting metallic elements to metallic oxalates in the presence of CO<sub>2</sub> includes 2 redox couple electrolyte solns. separated by a first membrane having photosensitizers. The CO<sub>2</sub> to be reduced is provided to a 2nd membrane which is contiguous to one of the redox couple electrolyte solns. The 2nd membrane has photosensitizers and a catalyst. A nonaq. electrolyte slurry, which includes a metal element, solvent and salt, is provided in a manner so that some of the slurry is in contact with the 2nd membrane. Both membranes are illuminated and elec. voltage is provided across the electrolyte solns. and the electrolyte slurry in a manner so that there is 1 electrode in another electrolyte solution and another electrode in the electrolyte slurry so as to cause a reaction between the CO<sub>2</sub> at the 2nd membrane and the electrolyte slurry to produce the metallic oxalate. In particular, an electrochem. method and apparatus are described for reducing CO<sub>2</sub> in cooperation with Zn or Cd to provide Zn or Cd oxalates.

IT 53-57-6  
 (catalysts, in photoelectrochem. production of oxalates from carbon dioxide)

RN 53-57-6 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate), P'→5'-ester with 1,4-dihydro-1-β-D-ribofuranosyl-3-pyridinecarboxamide (CA INDEX NAME)

Absolute stereochemistry.



IC ICM C25B003-04  
INCL 204-59R  
CC 72-9 (Electrochemistry)  
Section cross-reference(s): 23, 74  
IT 53-57-6 140-88-5 218-01-9 3317-67-7 7439-92-1, uses  
and miscellaneous 7440-74-6, uses and miscellaneous 11146-96-6  
12060-59-2 12612-78-1 14055-02-8  
(catalysts, in photoelectrochem. production of oxalates from carbon  
dioxide)



=> d his nofile

(FILE 'HOME' ENTERED AT 11:28:08 ON 15 SEP 2008)

FILE 'HCAPLUS' ENTERED AT 11:28:19 ON 15 SEP 2008

L1 1 SEA ABB=ON PLU=ON US20060073381/PN  
SEL RN

FILE 'REGISTRY' ENTERED AT 11:28:39 ON 15 SEP 2008

L2 16 SEA ABB=ON PLU=ON (105-58-8/BI OR 1184-10-7/BI OR  
12190-79-3/BI OR 1313-13-9/BI OR 14283-07-9/BI OR 2397-48-0  
/BI OR 33027-68-8/BI OR 722454-84-4/BI OR 722454-86-6/BI  
OR 724792-59-0/BI OR 724792-60-3/BI OR 7439-93-2/BI OR  
9002-88-4/BI OR 957-13-1/BI OR 96-48-0/BI OR 96-49-1/BI)  
L3 8 SEA ABB=ON PLU=ON L2 AND P/ELS

FILE 'HCAPLUS' ENTERED AT 11:30:09 ON 15 SEP 2008

L4 362 SEA ABB=ON PLU=ON L3  
L5 49 SEA ABB=ON PLU=ON L4 AND ELECTROLYT?  
L6 43 SEA ABB=ON PLU=ON L5 AND ELECTROCHEM?/SC, SX  
L7 1 SEA ABB=ON PLU=ON L6 AND L1  
L8 4 SEA ABB=ON PLU=ON L6 AND (SEPARAT? OR DIVID?)

FILE 'REGISTRY' ENTERED AT 11:33:43 ON 15 SEP 2008

L9 925016 SEA ABB=ON PLU=ON (P(L)N)/ELS  
L10 298759 SEA ABB=ON PLU=ON L9 AND X/ELS  
L11 820807 SEA ABB=ON PLU=ON L9 AND (SI OR BI OR GE OR SN OR SB OR  
O OR S OR SE OR TE OR PO)/ELS  
L12 322520 SEA ABB=ON PLU=ON L9 AND 2-100/P  
L13 249333 SEA ABB=ON PLU=ON L12 AND 2-100/N  
L14 4 SEA ABB=ON PLU=ON L13 AND L2  
L15 69902 SEA ABB=ON PLU=ON L13 AND X/ELS  
L16 24977 SEA ABB=ON PLU=ON L15 NOT M/ELS  
L17 2 SEA ABB=ON PLU=ON L16 AND L2  
L18 147700 SEA ABB=ON PLU=ON L13 NOT M/ELS  
L19 682222 SEA ABB=ON PLU=ON L11 NOT (L16 OR L18)  
L20 4 SEA ABB=ON PLU=ON L19 AND L2  
L21 474553 SEA ABB=ON PLU=ON L19 NOT M/ELS  
L22 474553 SEA ABB=ON PLU=ON L11 AND L21  
L23 83004 SEA ABB=ON PLU=ON L22 NOT 1-100/NR  
L24 2 SEA ABB=ON PLU=ON L23 AND L2  
L25 2 SEA ABB=ON PLU=ON L20 NOT L24  
L26 8 SEA ABB=ON PLU=ON L3 AND (L13 OR L16 OR L19 OR L22 OR  
L23)

FILE 'HCAPLUS' ENTERED AT 11:48:03 ON 15 SEP 2008

L27 QUE ABB=ON PLU=ON L13  
L28 QUE ABB=ON PLU=ON L16  
L29 QUE ABB=ON PLU=ON L23

FILE 'REGISTRY' ENTERED AT 11:55:12 ON 15 SEP 2008

L30 499051 SEA ABB=ON PLU=ON L19 AND 1/NC  
L31 393828 SEA ABB=ON PLU=ON L22 AND 1/NC

FILE 'HCAPLUS' ENTERED AT 11:55:49 ON 15 SEP 2008

FILE 'REGISTRY' ENTERED AT 11:56:12 ON 15 SEP 2008

L32 499051 SEA ABB=ON PLU=ON L30 OR L30

L33 150000 SEA RAN=(365563-54-8) ABB=ON PLU=ON L30 OR L30  
 L34 349051 SEA ABB=ON PLU=ON L32 NOT L33  
 L35 393828 SEA ABB=ON PLU=ON L31 OR L31  
 L36 150000 SEA RAN=(212008-85-0) ABB=ON PLU=ON L31 OR L31  
 L37 243828 SEA ABB=ON PLU=ON L35 NOT L36

FILE 'HCAPLUS' ENTERED AT 11:58:08 ON 15 SEP 2008

L38 22956 SEA ABB=ON PLU=ON L33  
 L39 25126 SEA ABB=ON PLU=ON L36  
 L40 359631 SEA ABB=ON PLU=ON L37

FILE 'REGISTRY' ENTERED AT 12:01:14 ON 15 SEP 2008

L41 349051 SEA ABB=ON PLU=ON L34 OR L34  
 L42 150000 SEA RAN=(128866-97-7) ABB=ON PLU=ON L34 OR L34  
 L43 199051 SEA ABB=ON PLU=ON L41 NOT L42

FILE 'HCAPLUS' ENTERED AT 12:02:05 ON 15 SEP 2008

L44 43157 SEA ABB=ON PLU=ON L42  
 L45 QUE ABB=ON PLU=ON L43  
 L46 QUE ABB=ON PLU=ON (L27 OR L28 OR L29) OR (L38 OR L39 OR  
 L40) OR (L44 OR L45)  
 L47 1185 SEA ABB=ON PLU=ON L46(L)ELECTROLYTE?  
 L48 465 SEA ABB=ON PLU=ON L47 AND ELECTROCHEM?/SC,SX  
 L49 118 SEA ABB=ON PLU=ON L48 AND (NONAQUEOUS? OR NON AQUEOUS?)  
 L50 1 SEA ABB=ON PLU=ON L49 AND L1  
 L51 1 SEA ABB=ON PLU=ON L47 AND L1  
 L52 5031 SEA ABB=ON PLU=ON L46 AND ELECTROLYT?  
 L53 1 SEA ABB=ON PLU=ON L52 AND L1  
 L54 230 SEA ABB=ON PLU=ON L52 AND (NONAQUEOUS? OR NON AQUEOUS?)  
 L55 16 SEA ABB=ON PLU=ON L54 AND (SEPARAT? OR DIVID?)  
 L56 169 SEA ABB=ON PLU=ON L54 AND ELECTROCHEM?/SC,SX  
 L57 81 SEA ABB=ON PLU=ON L56 AND DEV/RL  
 L58 93 SEA ABB=ON PLU=ON L55 OR L57  
 L59 65 SEA ABB=ON PLU=ON L58 AND (1840-2003)/PRY,AY,PY

FILE 'REGISTRY' ENTERED AT 12:32:21 ON 15 SEP 2008

L60 19704 SEA ABB=ON PLU=ON L16 AND 1/NC

FILE 'HCAPLUS' ENTERED AT 12:34:06 ON 15 SEP 2008

L61 10600 SEA ABB=ON PLU=ON L60  
 L62 13 SEA ABB=ON PLU=ON L61 AND L59  
 L63 51 SEA ABB=ON PLU=ON L59 NOT L28

FILE 'REGISTRY' ENTERED AT 12:35:09 ON 15 SEP 2008

L64 1 SEA ABB=ON PLU=ON 16921-91-8/RN

FILE 'HCAPLUS' ENTERED AT 12:35:20 ON 15 SEP 2008

L65 243 SEA ABB=ON PLU=ON L64  
 L66 64 SEA ABB=ON PLU=ON L59 NOT L65  
 L67 1 SEA ABB=ON PLU=ON L66 AND